California Department of Education
Technology Services Division

California Longitudinal Pupil Achievement Data System (CALPADS)

Feasibility Study Report

Submission 2

April 6, 2005

STATE OF CALIFORNIA

DEPARTMENT OF EDUCATION
1430 N Street
Sacramento, California 95814

Jack O'Connell, State Superintendent of Public Instruction

Prepared with the assistance of:
NewPoint Group®
Sacramento, California

Table of Contents

Information Technology Project Request

Feasibility Study Report
Executive Approval Transmittal

Department Name
California Department of Education
Project Title (maximum of 75 characters)
California Longitudinal Pupil Achievement Data System

Project Acronym	Department Priority	Agency Priority
CALPADS	**1**	**1**

APPROVAL SIGNATURES

I am submitting the attached Feasibility Study Report (FSR) in support of our request for the Department of Finance's approval to undertake this project.

I certify that the FSR was prepared in accordance with State Administrative Manual Sections 4920-4930.1 and that the proposed project is consistent with our information technology strategy as expressed in our current Agency Information Management Strategy (AIMS).

I have reviewed and agree with the information in the attached Feasibility Study Report.

Chief Information Officer		**Date Signed**
Printed name:	Kevin Matsuo	
Budget Officer		**Date Signed**
Printed name:	Carol Bingham	
Department Director		**Date Signed**
Printed name:	Susan Lange	
Agency Secretary		**Date Signed**
Printed name:	N/A	

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INFORMATION TECHNOLOGY PROJECT SUMMARY PACKAGE
SECTION A: EXECUTIVE SUMMARY

1.	**Submittal Date**	**August 20, 2004**

		FSR	SPR	PSP Only	Other:
2.	**Type of Document**	X			
	Project Number				

			Estimated Project Dates	
3.	**Project Title**	California Longitudinal Pupil Achievement Data System	**Start**	**End**
	Project Acronym	CALPADS	7/1/2005	8/8/2008

4.	**Submitting Department**	Department of Education
5.	**Reporting Agency**	

6. Project Objectives

The project will implement a comprehensive data repository and reporting environment to track statewide longitudinal student assessment data and other demographic elements required to meet the federal No Child Left Behind Act of 2001 (NCLB) reporting requirements. The project's objectives are to:

- Provide school districts and the CDE access to data necessary to comply with federal NCLB reporting requirements
- Provide a better means of evaluating educational progress and investments over time
- Provide local education agencies information that can be used to improve pupil achievement
- Provide an efficient, flexible, and secure means of maintaining longitudinal statewide pupil level data
- Promote good data management practices with respect to pupil data systems and issues.

8.	Major Milestones	Est. Complete Date
	Procurement complete	Apr 25, 2007
	Systems analysis and confirmation	May 16, 2007
	Systems design	Sep 10, 2007
	Data conversion software development	Jan 11, 2008
	Systems development	Dec 28, 2007
	Systems and integration testing	Mar 21, 2008
	User acceptance testing	May 16, 2008
	Pilot and implementation	Aug 8, 2008
	PIER	Jun 30, 2010
	Key Deliverables	
	Contract approval	Apr 25, 2007
	Gap analysis	May 16, 2007
	Detailed system design	Sep 10, 2007
	Data conversion software	Jan 11, 2008
	CALPADS application	Dec 28, 2007
	System integration test results	Mar 21, 2008
	User acceptance test results	May 16, 2008
	CALPADS in full production	Aug 8, 2008

7. Proposed Solution

Procure services of a vendor to prepare state solicitation document, and procure services of systems integrator to prepare system design and to develop, test, document, and implement CALPADS. Solution will provide secure access via the Web to individual student test scores on statewide exams, by student demographics and program participation, using pre-defined queries and reports.

INFORMATION TECHNOLOGY PROJECT SUMMARY PACKAGE
SECTION B: PROJECT CONTACTS

Project #	
Doc. Type	**FSR**

Executive Contacts								
	First Name	**Last Name**	**Area Code**	**Phone #**	**Ext.**	**Area Code**	**Fax #**	**E-mail**
Agency Secretary	N/A							
Dept. Director	Jack	O'Connell	916	319-0800		916	319-0100	JOconnell@cde.ca.gov
Budget Officer	Carol	Bingham	916	324-4728		916	327-8306	CBingham@cde.ca.gov
CIO	Kevin	Matsuo	916	445-0774		916	322-3257	KMatsuo@cde.ca.gov
Proj. Sponsor	Susie	Lange	916	319-0815		916	319-0106	SLange@cde.ca.gov

Direct Contacts								
	First Name	**Last Name**	**Area Code**	**Phone #**	**Ext.**	**Area Code**	**Fax #**	**E-mail**
Doc. prepared by	Ed	Kaempf	916	442-0429		916	442-0714	EKaempf@cde.ca.gov
Primary contact	Ken	Okuhara	916	323-8538		916	322-3257	KOkuhara@cde.ca.gov
Project Manager	Dan	Conway	916	947-2780		916	322-3257	DConway@cde.ca.gov

INFORMATION TECHNOLOGY PROJECT SUMMARY
SECTION C: PROJECT RELEVANCE TO STATE AND/OR DEPARTMENTAL PLANS

1.	**What is the date of your current Operational Recovery Plan (ORP)?**	**Date**	Jul 2003
2.	**What is the date of your current Agency Information Management Strategy (AIMS)?**	**Date**	Aug 10, 04
3.	**For the proposed project, provide the page reference in your current AIMS and/or strategic business plan.**	**Doc.**	AIMS
		Page #	54

Project #	
Doc. Type	**FSR**

		Yes	**No**
4.	**Is the project reportable to control agencies?**	X	

	If YES, CHECK all that apply:
X	**a) The project involves a budget action.**
X	**b) A new system development or acquisition that is specifically required by legislative mandate or is subject to special legislative review as specified in budget control language or other legislation.**
	c) The project involves the acquisition of microcomputer commodities and the agency does not have an approved Workgroup Computing Policy.
X	**d) The estimated total development and acquisition cost exceeds the departmental cost threshold.**
	e) The project meets a condition previously imposed by Finance.

Project #	
Doc. Type	FSR

Budget Augmentation Required?		
No		
Yes	X	If YES, indicate fiscal year(s) and associated amount:

FY 2005/06	FY 2006/07	FY 2007/08	FY 2008/09	FY 2009/10
$	$	$	$	$

PROJECT COSTS

1.	Fiscal Year	FY 2005/06	FY 2006/07	FY 2007/08	FY 2008/09	FY 2009/10	TOTAL
2.	One-Time Cost	$589,234	$1,838,687	$6,743,209	$383,117	-	**$9,554,547**
3.	Continuing Costs	-	-	-	2,106,523	2,749,454	**$4,855,977**
4.	TOTAL PROJECT BUDGET	$589,234	$1,838,687	$6,743,509	$2,489,640	$2,749,454	**$14,410,524**

SOURCES OF FUNDING

5.	General Fund						$
6.	Redirection	**$438,161**	**$149,384**	**$149,384**	**$149,384**	**$149,384**	**$1,035,697**
7.	Reimbursements						$
8.	Federal Funds	**$151,073**	**$1,689,303**	**$6,594,125**	**$2,340,256**	**$2,600,070**	**$13,374,827**
9.	Special Funds						$
10.	Grant Funds						$
11.	Other Funds						$
12.	PROJECT BUDGET	**$589,234**	**$1,838,687**	**$6,743,509**	**$2,489,640**	**$2,749,454**	**$14,410,524**

PROJECT FINANCIAL BENEFITS

13.	Cost Savings/Avoidances	$0	$0	$0	$0	$0	$0
14.	Revenue Increase	$0	$0	$0	$0	$0	$0

Note: The totals in Item 4 and Item 12 must have the same cost estimate.

Project #	
Doc. Type	FSR

Vendor Cost for FSR Development (if applicable)	$121,060
Vendor Name	NewPoint Group, Inc.

VENDOR PROJECT BUDGET

1.	Fiscal Year	FY 2005/06	FY 2006/07	FY 2007/08	FY 2008/09	FY 2009/10	TOTAL
2.	Project Management Budget	$ 205,864	$235,273	$ 242,625	$51,466	-	**$ 735,228**
3.	RFP Development Budget	306,892	166,091			-	**472,983**
4.	Ind. Proj. Oversight Budget	31,086	98,438	290,132	98,438	-	**518,094**
5.	Bus. Procss. Improve. Budget	-	-	136,700	-	-	**136,700**
6.	Systems Integrator Budget	-	652,708	4,327,758	193,624	-	**5,174,090**
7.	TOTAL VENDOR BUDGET	**$543,842**	**$1,152,510**	**$4,997,215**	**$343,528**	**$0**	**$ 7,037,095**

----------(Applies to SPR only)----------

PRIMARY VENDOR HISTORY SPECIFIC TO THIS PROJECT

7.	Primary Vendor	
8.	Contract Start Date	
9.	Contract End Date (projected)	
10.	Amount	$

PRIMARY VENDOR CONTACTS

	Vendor	First Name	Last Name	Area Code	Phone #	Ext.	Area Code	Fax #	E-mail
11.									
12.									
13.									

Project #	
Doc. Type	**FSR**

RISK ASSESSMENT

	Yes	No
Has a Risk Management Plan been developed for this project?	X	

General Comment(s)
Refer to Refer to Section 7, Risk Management Plan, for general and specific comments.

3 Business Case

The Assessment and Accountability Branch (AAB) and the Finance, Technology and Administration Branch (FTAB) of the California Department of Education (CDE) initiated a project effort to develop the California Longitudinal Pupil Achievement Data System (CALPADS), as required by Senate Bill 1453 (Chapter 1002, Statutes of 2002 (SB 1453)). The CALPADS project effort will implement a comprehensive data repository and reporting environment to track statewide longitudinal assessment data and other demographic elements required to meet the federal No Child Left Behind Act of 2001 (NCLB) reporting requirements.

This section justifies a project to develop and implement CALPADS. It describes the program and business processes to be supported by CALPADS, problems and opportunities that the project will address, expected results to be achieved with the proposed solution, and the functional requirements that will be used to measure success of the project.

This business case is presented in the following sections:

3.1 Business Program Background

3.2 Business Problem or Opportunity

3.3 Business Objectives

3.4 Business Functional Requirements.

3.1 Business Program Background

This section provides an overview and background of state and federal business programs associated with the CALPADS project effort. In addition, this section summarizes California's NCLB plan, the senate bills which define the CALPADS project effort, the impact the CALPADS project will have on various CDE programs, data collection, and reporting processes, and the anticipated CALPADS users. The business program background is presented as follows:

3.1.1 State Accountability and Assessment Program

3.1.2 Federal No Child Left Behind Act of 2001

3.1.3 California's NCLB Plan

3.1.4 Source of Data for California's NCLB Reporting

3.1.5 Senate Bill 1453

3.1.1 State Accountability and Assessment Program

The Public Schools Accountability Act (PSAA) of 1999 (Chapter 3, Statutes of 1999) requires that CDE annually calculate an "academic performance index" (API) for California public schools, including charter schools, and publish school rankings based on these APIs. The purpose of the API is to measure the academic performance and growth of schools. To assess the academic performance and growth of schools, California administers a series of statewide assessment tests. The state utilizes the following assessment tests to calculate the API:

- Standardized Testing and Reporting (STAR) program, generally administered once each year in the spring for grades 2 - 11:
  - California Standards Tests (CSTs) in English-language arts, mathematics, science, and history-social science
  - A norm-referenced test (NRT)
  - California Alternate Performance Assessment (CAPA) in English-language arts, and mathematics (for students with severe cognitive disabilities)
- California High School Exit Examination (CAHSEE)[1].

In addition to the assessment tests above, the state administers the California English Language Development Test (CELDT) to students for whom English is not their primary language. The CELDT measures a student's English proficiency in listening, speaking, reading, and writing. State law requires that districts administer the CELDT to new students within 30 days after they first enroll in a public school if there is no record of English proficiency assessment results and annually, thereafter, until the student is reclassified as fluent English proficient.

Each year, the CDE utilizes assessment test results to produce two reports: (1) a base report, which appears after the first of the calendar year; (2) and a growth report, which appears after school starts in the fall. This pair of reports is based on APIs calculated in exactly the same fashion with the same indicators but using test results from two different years. The 2003 API Base Report, which the CDE released March 9, 2004, represents the beginning of the fifth

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[1] Each 10th grader is required to take the California High school Exit Examination. Starting in 2006, a student must receive a passing score on each subject to receive a high school diploma. The student must meet other graduation requirements to graduate.

API reporting cycle. It provides rankings for over 8,000 schools and 1,047 local education agencies (LEAs).[2]

For a component of the API, the CDE also ranks schools academically on a scale from 1 to 10 (10 being the highest) to determine a school's standing compared to other schools statewide ("statewide" ranks) and to schools with similar characteristics ("similar schools" ranks). The similar schools characteristics include student mobility, student ethnicity, percent of teachers with full credentials, and average class size. Students from approximately 8,000 schools in 1,047 LEAs take the assessment tests each year. The number of tests administered annually is provided below:

- During the spring of 2003, the CDE administered 4.7 million STAR tests in grades 2 – 11.
- During the school year 2002/03, approximately 575,000 CAHSEE tests for English-language arts and 725,000 CAHSEE tests for math were taken (a single student may take CAHSEE more than once in a school year) in grades 10 – 11.
- During the school year 2002/03, approximately 1,781,000 CELDT tests were taken.

3.1.2 Federal No Child Left Behind Act of 2001

The federal reauthorization of the Elementary and Secondary Education Act, the No Child Left behind Act of 2001(NCLB), redefines the federal role in K – 12 education. Schools that fail to demonstrate "adequate yearly progress", or AYP, in improving student proficiency and closing achievement gaps face a series of escalating consequences.

The most significant changes in NCLB are in Title I, the main title of the act. Title I mandates that all students in all grades meet state academic achievement standards for English-language arts and mathematics by 2014,[3] and requires that all schools and districts demonstrate "adequate yearly progress" toward achieving that goal. To demonstrate AYP, each school, each district, and the state must:

- Demonstrate AYP for students overall and for each major subgroup, disaggregated by race, ethnicity, disability status, limited-English proficiency, and economically disadvantaged status (i.e., each subgroup must perform at or above proficiency by 2014 to meet AYP).
- Demonstrate that at least 95 percent of students enrolled on the first day of testing and from each subgroup participated in the assessments.

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[2] Source: The County-District-School database maintained by the CDE.

[3] States must adopt science standards by 2005/06 and then begin testing in the 2007/08 school year, once each in grades three to five, six to nine, and ten to twelve. Science performance is not included in the definition of AYP at this time.

NCLB requires each state to adopt at least one "additional indicator" for AYP. For high schools, the additional indicator must be the graduation rate.[4] For all schools, California has determined that the API will be the additional indicator to meet federal AYP requirements.

NCLB requires that Title I schools and districts that do not make AYP for two consecutive years enter "program improvement" (PI). Each consecutive year that a PI school fails to make AYP results in additional sanctions. After four years, NCLB requires a major restructuring of the school. To exit PI, schools must make AYP targets for two successive years.

Other titles of NCLB legislation require that:

- By the end of the 2005/06 school year, all teachers of core academic subjects in public schools must be "highly qualified" in their subject areas and all instructional paraprofessionals in programs supported by Title I funds must meet the paraprofessional requirements by January 8, 2006. All new teachers of core academic subject hired after the first day of the 2002/03 school year, and all new paraprofessionals hired after January 8, 2002 who work in a program supported by Title I funds, must meet the highly qualified requirements when hired.
- All English language learners will become proficient in English (Title III, Part A of NCLB).
- All students will learn in schools that are safe and drug free. States must report on school safety to the public and allow students who attend a persistently dangerous school, or who become a victim of a violent crime at school, to transfer to a safe school (Title IV, Part A of NCLB).

Beginning with the 2002/03 school year, NCLB requires all states to publish annual state report cards that reflect the prior year's data. NCLB also requires annual reports at the LEA level, but allows states that already had such report cards prior to enactment of NCLB to use those "preexisting" report cards, so long as they contain information required by NCLB. California had the School Accountability Report Card (SARC) required by Proposition 98 (1988) and modified it to meet NCLB reporting requirements. The SARC is the California reporting vehicle that satisfies the NCLB report card requirement.

Figure 3.1, on the following page, summarizes the NCLB report card requirements. The figure identifies the primary subjects that are included in each report.

NCLB requires that report cards should provide statistically reliable information and should not reveal personally identifiable information about an individual student.

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[4] Until CALPADS is implemented, California is using a "synthetic" graduation rate corresponding to U.S. Department of Education's National Center for Education Statistics four-year completion rate. This method relies on graduate and dropout counts to estimate the percentage of students who leave school with a diploma, aggregated over a four-year period.

Figure 3.1 NCLB Report Card Information Requirements

California's Consolidated State Performance Report	
State Report	**LEA Report**
❑ State assessment results disaggregated by subgroup: race, ethnicity, disability status, limited English proficiency, economically disadvantaged status, migrant status, and gender ❑ A comparison of students at proficient and advanced levels on state tests ❑ The percentage of students not tested, disaggregated by subgroup ❑ The most recent two-year trend in student achievement in each subject area, and for each grade level ❑ Aggregate information on any other indicators used by the State to determine the adequate yearly progress of students in achieving State academic achievement standards ❑ High school graduation rates ❑ Information on the performance of LEAs making AYP, including the number and names of each school identified for school improvement ❑ The professional qualifications of teachers, the percentage of such teachers teaching with emergency or provisional credentials, and the percentage of core academic classes not taught by highly qualified teachers, in the aggregate and disaggregated by high-poverty compared to low-poverty schools (meaning schools in the top quartile of poverty and the bottom quartile of poverty in LEA) In California, these requirements have been incorporated into the pre-existing the School Accountability Report Card	Same requirements as State report card plus: **For the LEA** ❑ Number and percentage of schools identified for school improvement and how long the schools have been so identified ❑ Information that shows how students served by the LEA achieved on the statewide academic assessment compared to students in the State as a whole **For each school in the LEA** ❑ Whether the school has been identified for school improvement ❑ Information that shows how the school's students achievement on the statewide academic assessments and other indicators of AYP compared to students in the LEA and the State as a whole

3.1.3 California's NCLB Plan

On June 10, 2003, the CDE obtained federal approval of its consolidated state NCLB plan.[5] The state NCLB plan adopted the definition of AYP developed in January 2003 by the State Board of Education (SBE). All schools (including charter schools, alternative schools, and small schools), districts, and numerically significant subgroups[6] are required to make AYP, regardless of whether the school or district receives federal Title I funding.

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[5] *State of California Consolidated State Application Accountability Workbook for State Grants under Title IX, Part C, Section 9302 of the Elementary and Secondary Education Act (Public Law 107-110).*

[6] To be considered numerically significant, a subgroup must: (1) have at least 50 students for AYP (or 30 students for API) with valid STAR scores, who make up at least 15 percent of the school's valid STAR scores, or (2) have at least 100 students with valid STAR scores.

In order for any school or district to make AYP, the school or district must have:

- A sufficient proportion of its students performing at or above the proficient level on the statewide English-language arts (ELA) and math assessments overall and for each numerically significant subgroup, disaggregated by race, ethnicity, disability, limited English proficiency, and economically disadvantaged status (i.e., each subgroup must meet or exceed the state AYP target for that year)
- At least a 95 percent participation rate on the ELA and math tests overall and for each significant subgroup
- An API that meets a status target that increases through 2014 (the 2004 target is 560) or at least one point increase in its base to growth API (API is the "additional indicator" required by NCLB)
- For secondary schools, a 2004 graduation rate of at least 82.8, or improvement in the rate of at least one tenth of one percent from 2003, or improvement of at least two tenths of one percent from the average of 2001/2002 to the average of 2003/2004, as also required.

3.1.4 Source of Data for California's NCLB Reporting

Data needed by CDE to meet NCLB accountability measures come from a variety of sources. **Exhibit 3-1**, on the following pages, provides a summary of current data sources.

This exhibit does not include all subjects required to meet all NCLB reporting requirements. Rather, Exhibit 3-1 identifies the processes which provide data required to meet CDE established performance indicators that meet NCLB reporting requirements.

Exhibit 3.1 Data Sources for NCLB Accountability Reporting

Entity Providing Data	CDE Process That Captures the Data	NCLB Accountability Measure	Data Level
NCLB Title I, Part A: Improving Basic Programs Operated by LEAs			
❑ LEA ❑ Test Vendor	❑ STAR ❑ CAHSEE	❑ AYP - proportion of students proficient in ELA and math ❑ API	Student
❑ LEA ❑ Test Vendor	❑ STAR ❑ CAHSEE	❑ Assessment participation rate	Student
❑ LEA ❑ CSIS (for participating LEAs)	❑ California Basic Educational Data System (CBEDS)	❑ Graduation rates	School
NCLB Title II: Preparing, Training, and Recruiting High Quality Teachers and Principals			
❑ LEA	❑ Consolidated Application (ConApp) for 2004 and 2005 ❑ CBEDS Professional Assignment Information Form (PAIF) beginning in fall 2005 (except professional development)	❑ Percent of core academic subject classes taught by "high quality" teachers ❑ Percent of teachers in the school teaching core academic classes who received high quality professional development	School (through 2005) Teacher (2006)
❑ LEA	❑ ConApp	❑ Percent of paraprofessionals who assisted in instruction in Title I funded schools who meet NCLB requirements	School
NCLB Title III, Part A: English Language Acquisition, Language Enhancement, and Academic Achievement Act			
❑ LEA ❑ Test Vendor ❑ CSIS (for participating LEAs) ❑ CDE – Professional Development and Curriculum Support	❑ CELDT ❑ R-30 Language Census Form ❑ Student National Origin Report (SNOR)	❑ Gains in the percentage of students making progress in learning English ❑ Gains in the percentage of students attaining English proficiency	Student

(continued on next page)

Exhibit 3.1 Data Sources for NCLB Accountability Reporting *(continued)*

Entity Providing Data	CDE Process That Captures the Data	NCLB Accountability Measure	Data Level
NCLB Title IV, Part A: Safe and Drug-Free Schools and Communities			
❑ LEA	❑ ConApp ❑ CBEDS	❑ Truancy rates (a) ❑ Expulsions and suspensions rates for violence or drug use (a) ❑ Percentage of schools that are labeled as persistently dangerous	School
❑ LEA	❑ ConApp	❑ Number of student expulsions related to firearms, type of firearm, whether student referred to an alternative school or program, whether expulsion shortened to less than one year, and whether student was disabled	Student (w/out identifying student)
❑ LEA	❑ California Healthy Kids Survey	❑ Incidence and prevalence of illegal alcohol and other drug use and violence, SDFSC programs and activities, and performance objectives and progress in meeting objectives (a)	LEA

(a) NCLB does not require that CDE report this measure to the federal government.

3.1.5 Senate Bill 1453

In response to federal NCLB requirements, the Legislature passed, and the Governor signed into law in September 2002, Senate Bill 1453 (SB 1453). This bill requires access to longitudinal pupil achievement data to assess the long-term value of California's educational investments and programs. To provide the state and local educational agencies (LEAs) access to longitudinal pupil data, SB 1453 requires the:

- Assignment of a unique, yet non-personally identifiable student identifier to each K-12 student enrolled in a public school program or charter school that will remain with the student throughout the student's attendance in the state's public school system
- Establishment of CALPADS that includes statewide assessment data, enrollment data, and other data required to meet federal NCLB reporting requirements
- Retention and analysis of longitudinal pupil achievement data on the Standardized Testing and Reporting program (STAR), the California High School Exit Examination (CAHSEE), and the California English Language Development Test (CELDT).

SB 1453 is intended to assist the State in assessing the long-term value of California's educational investments and in providing a research basis for improving student performance through the development of a longitudinal information system. This bill added Chapter 10 in Part 33 of the Education Code that:

- Specifies various goals and characteristics of the CALPADS system, including, but not limited to, storage and maintenance of data necessary to comply with NCLB, and providing LEAs information that can be used to improve pupil achievement (§60900 (d))
- Requires LEAs and charter schools, in order to comply with federal law, to participate in CALPADS, as specified (§60900 (e))
- Specifies CALPADS characteristics, including the ability to sort assessment data by demographic elements, monitor pupil achievement from year to year and school to school, and to provide data to LEAs upon their request ((§60900 (f))
- Requires all data elements and codes to comply with federal and state privacy laws (§60900 (g))
- Requires the CDE to convene an advisory board, as specified, to establish privacy and access protocols, provide general guidance, and make recommendations relative to data elements (§60900 (h)).

3.1.6 Senate Bill 257

In an effort to further define the intent of SB 1453 and address concerns related to data management practices and confidentiality, the Legislature passed, and the Governor signed into

law in October 2003, Senate Bill 257 (SB 257) to amend Section 52052.5 of the Education Code. SB 257 states it is the intent of the Legislature to:

> *"Promote good data management practices with respect to pupil data systems and issues including, ensuring confidentiality, producing analyzable files for approved users, and linking pupil data with data from other agencies and users, including a mechanism to monitor pupil progress in postsecondary education."*
>
> *"Provide for data management and data sharing that is conducted in a manner so as to protect individual pupil data. Specifically, the systems should use unique identifiers that cannot be traced to the pupil's identity."*
>
> *"Establish state data management practices that require the development of specific categories of users and uses for pupil data and establish responsibility for approving and servicing users, as well as, responsibility for establishing and posting protocols, criteria, and procedures for use that are developed in a manner consistent with recommendations of the State Department of Education's advisory committee on privacy and data protocol."*

SB 257 also requires an existing advisory committee on accountability to make recommendations to the Superintendent of Public Instruction (SPI), by July 1, 2005, on the feasibility of generating a measurement of academic performance by utilizing unique student identifiers and annual academic achievement growth, with the goal of providing a more accurate measure of a school's growth over time. In addition, the bill requires the SPI, with approval of the State Board of Education, to develop and implement this measurement of the academic performance if found appropriate and feasible.

3.1.7 Proposal Impact

If the proposed project's objectives are met, CALPADS will have the following impacts:

- **Improve the accuracy of NCLB reporting**. Because student demographic and program participation data will be provided to CALPADS throughout the year, LEAs will have significantly more time to review and correct this information in advance of AYP scores being posted. Longitudinal data also will allow the CDE to determine an accurate graduation rate, rather than rely on the current "synthetic" graduation rate.
- **Provide a better means of evaluating educational progress and investments over time**. LEAs, the CDE, education researchers, and legislative policy analysts will have access to data that do not exist today but which are needed to effectively and accurately evaluate student academic progress and the effectiveness of public school investments. Longitudinal data will allow end-users to examine trends in student achievement,

determine progress of student cohorts over time, and control for the changing composition of the student body.

- **Reduce data collections**. The CDE will use student-level data collected for CALPADS to reduce the number of CBEDS and ConApp data collection forms that LEAs currently must complete each year. Currently, the CDE is evaluating what would remain in CBEDS and ConApp after CALPADS is in production, and what CBEDS and ConApp data requests will be eliminated. Using student-level data in CALPADS to produce required aggregate reports now requested by CBEDS and ConApp would reduce LEAs efforts to provide aggregated information. Furthermore, in the future, the CDE could eliminate other data collections by adding a few non-NCLB student-level data elements. For example, if the CDE included the home language of each English learner as a CALPADS data element, then the CDE could eliminate entire sections of the R-30 Language Census form.
- **Reduce test vendor responsibilities and charges**. Efforts by test vendors to perform the following four contracted activities will be reduced: (1) managing the pre-identification process, (2) merging student test results with student demographic and program participation data, (3) preparing reports to allow LEAs and the CDE to review the quality of student test records, and (4) allowing LEAs to review and edit individual student demographic and program participation data elements. Under CALPADS, LEA student demographic and program participation data can be updated before and after assessment testing by LEAs, therefore shifting management of LEA student data from the test vendor to CALPADS.
- **Increase CDE resource requirements**. The CDE will be required to qualify research organizations that request data from CALPADS, respond to California Public Records Act requests, and comply with federal and state privacy laws and regulations protecting the confidentiality of student records when responding to data requests. To accomplish this, the CDE will require additional staff and will transition the current CALPADS/CSIS Office to the CALPADS Services Office. This office will qualify researchers who request access to CALPADS, review the purpose of requests by qualified researchers, track requests in accordance with Federal Education Rights and Privacy Act (FERPA) and state privacy requirements, construct requested data sets, and transmit data sets to researchers.

  To develop, operate, and maintain CALPADS, the CDE will also require an additional information technology support position to provide for business rules updates, requirements definition for new requirements, liaison with the vendor or entity selected to operate and maintain CALPADS, technical planning, program coordination, and administration.

3.1.8 CALPADS Users

Primary end-users of CALPADS include:

- CDE
- County offices of education, school districts, charter schools, and state agencies with responsibility for education
- Legislative policy analysts
- Evaluators of public school programs
- Education researchers from established research organizations
- CAHSEE independent evaluators.

3.2 Business Problem or Opportunity

The CDE seeks to implement a single integrated application environment that fully supports SB 1453 and SB 257 goals and requirements enabling the evaluation and assessment of educational progress and investments over time. With the passage of SB 1453 and SB 257, the state legislature established five goals for CALPADS. The CDE is using these five goals as the opportunity statements for CALPADS.

The five opportunities are discussed below (the legislation establishing each goal/opportunity is provided in parentheses) in the same order as presented in the legislation. This order is followed throughout this section to present the project's opportunities, objectives and functional requirements.

A. Provide school districts and the CDE access to data necessary to comply with federal No Child Left Behind (NCLB) reporting requirements (SB 1453)

California Education Code §60900(a) requires that the CDE contract for development of CALPADS. Further, California Education Code §60900(d)(1) requires that CALPADS provide school districts and the CDE access to data necessary to comply with federal No Child Left Behind Act of 2001 (P.L. 107-110) reporting requirements.

Improved LEA data accuracy

The longitudinal student data system will capture and maintain district, school, and student level information. Utilizing student level data (lowest level of detail) to generate the NCLB reporting requirements should significantly improve the accuracy of results. In addition, the CDE will collect student demographic and program participation data needed to meet NCLB reporting requirements throughout the school year and not just when assessment tests are taken, as it is done today. This approach will enable schools to focus, at assessment test time, on administration and security, not on creating an accurate record of the student's enrollment and demographic

information such as whether the student is enrolled in bilingual education, National School Lunch Program (NSLP), or is considered migrant, or what education level the student's parents achieved. Instead, LEAs will provide these enrollment, demographic, and program participation data to the CDE during fall enrollment and as often as deemed necessary by the LEA throughout the school year to confirm the accuracy of the information provided to CALPADS. With this approach, CALPADS becomes the database of record for all LEAs. The CDE also will be able to compile required NCLB reports from test results provided by test vendors and the student demographic data maintained in CALPADS.

CALPADS will provide LEAs the ability to update their profile of student populations months before these profiles are required for NCLB reporting. This is a significant quality improvement benefit of CALPADS. The AYP results published by the CDE in August each year determine whether a school should be considered a program improvement (PI) school, which then results in sanctions. According to LEAs, errors in student demographic and program participation data have been a reason a school does not meet AYP. Being able to continually review and correct these data over several months prior to the tests will allow LEAs to reduce or eliminate these data errors.

Improved reporting

Maintaining student level demographic information longitudinally on CALPADS will ease the reporting burden on schools and improve the quality of some required reports. The CDE currently relies on schools to report aggregate student enrollment, graduation, and dropout rates through the CBEDS and to report student discipline data on the ConApp. With student-level information stored in CALPADS, the CDE could assist schools by generating these same aggregate reports for the entire state with increased efficiency, accuracy and timeliness.

Improved accuracy of graduation rate calculation

Longitudinal student data will provide a more accurate measure of NCLB-required graduation and drop out rates, significantly reducing the numbers of students who are unaccounted for. Currently, it is not possible to develop a graduation rate that meets NCLB requirements because the state does not have the tracking and reporting infrastructure to monitor student mobility. Last year, for example, statewide summary data indicated a 70 percent graduation rate and a 12 percent dropout rate, leaving 18 percent of students unaccounted for. Accounting for students who transfer across districts, transfer to a private school, matriculate to junior college, or leave the state necessitates a statewide unique student identifier and a system that can identify every student.

Improved tracking of subgroups to meet NCLB requirements

Under the state accountability system, schools are held accountable for the performance of subgroups annually. Under NCLB, however, the performance of these subgroups must be tracked longitudinally. For example, under NCLB LEAs must demonstrate annual increases in the percentage of students making progress in learning English on the California English Language Development Test (CELDT). This is determined by comparing the CELDT

scores of each English Learner (EL) in prior years. In addition, ELs are counted as ELs in assessment results, even after they have been redesignated as RFEPs (redesignated fully English proficient), until they score proficient on the English language arts CSTs for three years. It is very difficult to make these determinations without a student identifier and longitudinal data. Tracking performance of subgroups, in particular English learners, will be easier with CALPADS.

B. Provide a better means of evaluating educational progress and investments over time (SB 1453)

The API and its school rankings are based on cross sectional data and provide a snapshot of achievement for a specific group of students at a given moment in time. Comparing a school's API scores from year to year is, to varying degrees, a comparison of two different populations of students.

For example, the group of students who attended an elementary school during the 2002/03 school year and took the STAR tests in 2003 is generally a different group than those who attended the school the following year and took the STAR tests in 2004. The sixth (fifth in some districts) graders who took the test in 2003 presumably advanced to a middle school and were not tested as the same group a year later. Second graders taking the 2004 test did not take it the year before. The problem may be further complicated by significant student turnover from year to year as families move into and out of a school's enrollment area.

While API cross sectional data provides one measure of school performance, this measure cannot tell educators and the public:

- How well a school is doing with students that have been continuously enrolled
- How a group of students have progressed academically over time
- If learning is occurring most efficiently and effectively
- Whether individual students are gaining ground at a yearly rate that allows more and more of them to reach and maintain English language arts and math proficiency as they progress through school.

CALPADS will provide longitudinal pupil achievement data that can be used to address these issues for all LEAs statewide. The data can be used to distinguish students who have been in a school for a period of time from those who have not. The data can be used to look back to the academic success of students when they first entered a school and forward to their success when they leave the school.

Some questions that can be answered only with longitudinal pupil achievement data include the following:[7]

- How well do students do who have been enrolled in this school or program for more than one year?

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[7] Source of these sample questions: National Center for Educational Accountability.

- How does the success of students enrolled in this school for three years or longer compare with that of students enrolled for three years in the highest-performing comparable schools?
- How much academic progress do students make in the 4th grade?
- How do the graduates of this elementary school do in middle school?
- How well do graduates of this high school do in college? How many of them go to college?
- How well do students perform at the end of their enrollment in this school compared with how they were performing when they arrived?
- How does this middle school perform with students who entered the school well prepared in mathematics? How does the same school perform with students who were poorly prepared?
- How many students who were basic when they entered the high school end up scoring proficient or advanced on standard-based tests?

C. Provide local education agencies information that can be used to improve pupil achievement (SB 1453)

CALPADS will provide LEAs access to the aggregated data of other schools and districts. With these data, LEAs will be able to compare themselves to other schools and districts. CALPADS also will enable programs such as "Just for Kids" to help LEAs identify like schools that are getting better results, thus pointing them to a potential valuable resource.

CALPADS also will provide LEAs access to their own students' longitudinal student level data. CALPADS will provide these data as data files and in pre-determined reports. For those districts that currently do not maintain longitudinal data, CALPADS will provide data that they can use to assess and track the achievement of their students.

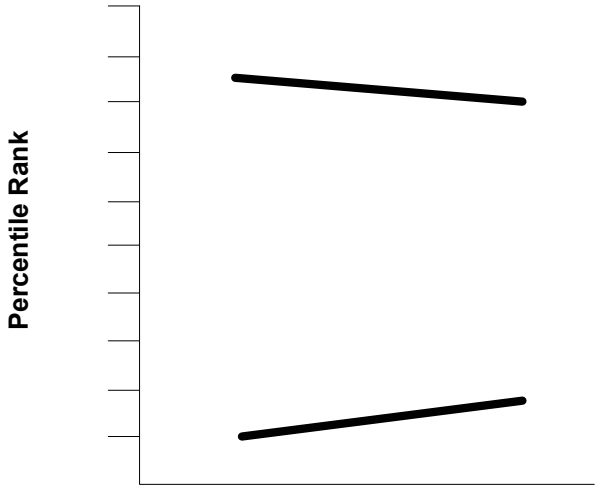
For all LEAs, data provided by CALPADS can be merged with local data, (such as fiscal, program, teacher, and classroom level data), to create a local decision making environment that will enhance decisions related to improving program and instructional practices, guiding professional development, and allocating resources. Specifically, longitudinal student data allows LEAs to perform "value-added" analysis. Value added analysis begins by measuring the growth of student learning over time. Value-added analysis:

- Takes into account where students start and measures their gains over time. For example, value-added analysis of longitudinal data may identify schools serving disproportionately more academically disadvantaged students that are doing an excellent job of increasing students' academic growth, even though these schools' absolute API scores are lower than schools traditionally seen as high performing, high scoring schools. **Figure 3.2**, on the next page, is an illustration of this type of analysis.
- Allows better diagnosis of student needs, stronger evaluation of educational initiatives, and better decision making at a school, district, and state levels. This can be accomplished because longitudinal data can be used to determine what student competencies are more predictive of academic success in later years, which schools have programs that

sustain and increase the performance of students with advanced achievement in tested areas, and which schools have instructional practices that are most effective for students with special needs.

- Allows analysis of the effectiveness of different educational strategies
- Separates out (or at least significantly adjusts for) the influence of non-school related variables, such as the students' socioeconomic background, on academic growth
- Helps LEAs to more effectively align district-level policies, resources, and instructional strategies with the needs of individual schools.

Figure 3.2 The Better School?



D. Provide an efficient, flexible, and secure means of maintaining longitudinal statewide pupil level data (SB 1453)

Senate Bill 1453 requires that CALPADS comply with all state and federal privacy laws. In addition, nothing in NCLB overrides the Federal Education Rights and Privacy Act (FERPA). Under FERPA, state education agencies, educators, and researchers may have access to student-level information for "education purposes", such as to assist students, or to conduct research to determine what works and how to improve programs. However, they cannot share student-level data with unauthorized persons or produce reports on student groups where the student's identity can be inferred. FERPA prohibits the release of student records or "personally identifiable information" to a party outside the school system unless there is parental consent. There are a number of exceptions, which include data given to "other school officials" with a legitimate education interest, and data given to "state and local officials" acting in compliance with the law.

CALPADS will provide a secure means of maintaining longitudinal statewide pupil level data and will adhere to all state and federal privacy laws.

In order to ensure privacy, all students will be assigned a non-personally identifiable student identification number developed and assigned by the California School Information Services (CSIS) program. Senate Bill 1453 requires all students to have a "unique identification number to be identical to the pupil identifier developed pursuant to the California School Information Services." The statewide student identifier (SSID) assigned by CSIS is a 10-digit, random, numeric value that does not contain any personally identifiable information.

The CDE intends to house CALPADS in a secure facility that meets all state requirements. The CDE will provide access to CALPADS only through secure channel "http" on the Internet. This is the same channel used by financial institutions to provide security from hackers.

FERPA allows researchers access to data for "legitimate education purposes." Senate Bill 257 specifies approved users of pupil data to include "legislative policy analysts, evaluators of pupil school programs, and education researchers from established research organizations."

With guidance from the CALPADS Advisory Board, the CDE will adopt through regulations, privacy and access protocols consistent with FERPA requirements. To adhere to FERPA and the developed regulations, the CDE intends to establish the CALPADS Services Office to review and track all requests for CALPADS data in accordance with FERPA and state regulations. For example, the office will qualify research organizations that request data from CALPADS and review the purpose of each research request to determine that it is for a "legitimate education purpose."

Finally, LEAs will be required to adopt their own privacy and access protocols consistent with FERPA requirements.

E. Promote good data management practices with respect to pupil data systems and issues (SB 257).

This system will be adopted consistent with the CDE's *Guiding Principles for Data Management*, adopted on January 8, 2003, including:

- CDE will collect and store data when there is a compelling business need, such as a legislative mandate or a requirement to support state operations.
- CDE programs and divisions are responsible for collecting and storing accurate and reliable information. CDE's programs and divisions that collect and/or disseminate information are responsible for ensuring the underlying data are well defined, accurate and reliable as well as providing notification if the underlying data changes.
- Data are a departmental asset and do not belong to any particular office, program, or individual. Upon request, the office, program or individual will make data available in a manner that is timely, understandable and consistent with the level of the data's confidentiality.
- CDE is committed to minimizing data redundancy and maximizing data value.

- To minimize redundancy and maximize use, decisions to develop, delete, or modify data processes and/or systems will be coordinated with the Education Data Office and the Project Management Office in a manner consistent with policies and priorities set by the Department's executive team.
- Development of modification of any data-related systems must be done in full compliance with the State's information technology reporting polices.

CALPADS will greatly enhance the CDE's ability to move its data collections to be consistent with these guidelines. To establish this, the CDE followed the fifth guiding principle above and coordinated development of the FSR "*with the Education Data Office and the Project Management Office in a manner consistent with policies and priorities set up the Department's executive team*." The CDE also developed the FSR "*in full compliance with the State's information technology reporting policies*" (Senate Bill 1453).

Prior to NCLB and SB 1453, there was no requirement for a statewide student identification number. In the absence of a common identifier, it was not possible to integrate data, therefore, the CDE has had to collect numerous aggregate reports from LEAs in order to meet state and federal reporting requirements. The requirement that all students have a unique student identification number and the development of CALPADS provides the CDE the opportunity to collect student data in a much more efficient and effective manner.

CALPADS is envisioned to become the "database of record" for student data. Rather than submit to the state student-level and aggregate data numerous times during the year, LEAs will be allowed to keep student-level data in CALPADS current by reviewing and updating this information throughout the year as they deem necessary. The CDE will notify LEAs regarding the dates on which certain data will be utilized for specific reports. CALPADS will allow these data to be linked via the unique student identification number to assessment data, and will support the aggregation and extraction of the data, as necessary, to create the numerous and varied reports required by the state and federal governments.

To collect data necessary for NCLB reporting, the CDE currently collects aggregate student demographic data from the California Basic Educational Data System (CBEDS), and the Consolidated Application (ConApp). In addition, on every administration of each statewide assessment (STAR, CAHSEE, and CELDT), the CDE collects individual-level student demographic and program participation data via the test vendor, through a process referred to as "pre-ID." These data serve as input data to the high-stakes API and AYP calculations. Approximately 75 percent of LEAs, (representing 95 percent of public K-12 students statewide), participate in the pre-ID process prior to the administration of the assessment tests.

Not only does this collection system require LEAs to submit data for each test administration, but the process tends to inaccurately reflect student demographic and program participation information. Due to the "high stakes" nature of the AYP and API results, these errors can result in incorrect designations of LEAs as "program improvement" schools. Last year, the CDE had to remove the posted statewide AYP results for a few days to allow LEAs to correct their data.

CALPADS will allow the CDE to "*minimize data redundancy and maximize data value*." CALPADS will allow the CDE to eliminate significant portions of the CBEDS collections and a number of pages of the ConApp. In addition, because CALPADS will maintain student-level demographic and program participation data, LEAs will not need to provide these data on each and every assessment test.

LEAs will be able to review and update the data as they deem necessary to keep it current and accurate. Allowing LEAs to continuously update CALPADS data throughout the year will provide them more time to review and correct data. Doing so will increase the likelihood that their data will be accurate when the CDE uses the data to calculate the API and AYP. CALPADS will include automatic data checks and summaries that will assist LEAs to identify and correct data errors. This capability further increases data quality and value.

Currently, LEAs submit the same "data elements" to the CDE multiple times using different definitions, formats, and codes. As part of its data management improvement efforts, the CDE is in the process of standardizing the data elements it collects by developing a "preferred variation" in CDE's common data architecture for each element. As the database of record, CALPADS will collect student-level demographic and program participation data to the extent feasible in the CDE's "preferred variation." Doing so will facilitate the standardization of data elements, helping to establish that "*the underlying data are well defined, accurate and reliable*." This will also ease the burden on LEAs, as they will not be required to submit the same data elements in different ways.

Many CDE divisions now collect data to meet the reporting requirements for the programs they administer. Over the years, a "data silo" environment has evolved in which data are not easily compared, integrated, or shared. CALPADS will transition this environment to one in which data are viewed as "*a Departmental asset and do not belong to any particular office, program, or individual*." Individual divisions will no longer have to collect certain data because CALPADS will be able to provide the data to them that is standard, consistent across the department, and more accurate, integrated and reliable.

As part of the data management improvement efforts, the CDE reviewed its data collections to determine whether "*there is a compelling business need, such as a legislative mandate or a requirement to support state operations.*" During this review, the CDE eliminated and/or reduced data collections. For those collections that are legislative mandated, the CDE determined that if in the future, CALPADS collected some additional data elements, then CALPADS also could satisfy other state reporting requirements. Doing so would allow the CDE to phase out additional required collections, further reducing the reporting burden on LEAs and "*minimizing data redundancy and maximizing data value*." Therefore, CALPADS provides a critical vehicle for continued enhancement of LEA and CDE data management practices.

Finally, using the student identification number to link student data will not only allow for efficient collection of data, but it will "*maximize data value*" and provide flexibility to the system. For example, the student identification

number allows linkages to other student-level databases, such as the California Special Education Management Information System (CASEMIS).

Linking test results with more accurate demographic and program participation data provides information necessary to:

- Help satisfy NCLB requirements to report test scores, disaggregated by major subgroup
- Help satisfy NCLB requirements to report on the percentage of students not tested, disaggregated into the same subgroups used for test score data
- Help satisfy NCLB requirements to report on adequate yearly progress. This allows the CDE to determine that only students who were enrolled in the same school or district since the fall are included in each school's and district's AYP report.
- Help satisfy NCLB requirements to track the progress made by children in meeting state proficiency requirements for the two years after they leave a bilingual or English as a second language program
- Help satisfy NCLB requirements for accurate graduation rates. Accounting for students who transfer across districts, transfer to a private school, or leave the state is difficult if not impossible to do without a unique statewide student identifier and a system that can track and identify every student. Districts could access CALPADS and using the SSID determine whether a student is currently enrolled in a California public or public charter school. Districts also could collect information on students in certain grades who were enrolled one year, not enrolled the next, and did not graduate. This information could be used to distinguish among dropouts, general equivalency degrees (GEDs), and students who cannot be located.
- Help districts more efficiently satisfy state requirements regarding a new student whose primary language is not English. State law requires districts to administer the California English Language Development Test (CELDT) to such students within 30 days after they first enroll in a public school if there is no record of English proficiency assessment results. Often times, a school unnecessarily administers the test because it is unaware that the student already took the test at another school.
- Help satisfy NCLB requirements for accurate measures on the progress of English learners in learning English. Currently, a school self-reports on the answer document an English learner's prior CELDT result. The CDE compares this prior score with the current test score to comply with NCLB reporting requirements. Having the actual test result maintained in CALPADS relieves schools from having to locate this score and ensures that the prior score being used for NCLB purposes is correct.
- Relieve schools and districts from completing their own aggregated student reports (now submitted on California Basic Educational Data System (CBEDS) forms), because CDE could produce these required reports from the student-level demographic data provided by each school

- Relieve schools and districts from completing their own student-level discipline reports (now submitted on two separate Consolidated Application (ConApp) forms), because CDE could produce the required reports from the student-level discipline data provided by each school.

3.3 Business Objectives

The CDE seeks to meet the requirements of SB 1453 and SB 257. The solution must meet the following objectives,[8] in addition to satisfying all other existing minimum functionality shown in **Exhibit 3-2**, at the end of this section.

A. Provide school districts and the CDE access to data necessary to comply with federal No Child Left Behind (NCLB) reporting requirements (SB 1453)

- Collect data elements identified by the CDE as necessary to meet NCLB reporting requirements
- Provide data access to CDE program areas responsible for reporting NCLB
- Collect required student level data elements to enable longitudinal tracking and improved aggregate reporting functionality to meet SB 1453 requirements

B. Provide a better means of evaluating educational progress and investments over time (SB 1453)

- Collect and maintain student demographic, program participation, and assessment data over time
- Improve the accuracy and integrity of the data used to make high stakes designations

C. Provide local education agencies information that can be used to improve pupil achievement (SB 1453)

- Provide convenient access to CALPADS data for authorized end-users
- Provide longitudinal student achievement data sets to LEAs and qualified researchers upon request
- Provide aggregate statewide comparisons of LEA and school data to LEAs

D. Provide an efficient, flexible, and secure means of maintaining longitudinal statewide pupil level data (SB 1453)

- Provide a technology platform compatible with in-house expertise and CDE technology standards

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[8] The Department of Finance requires that the CDE prepare a report that documents whether the objectives identified in this section of the feasibility study report have been met by CALPADS. This evaluation must be based on results of CALPADS being in full production for at least one year.

- Provide an environment that complies with Federal Education Rights and Privacy Act (FERPA) and state privacy laws
- Provide at least one month for LEAs to review and correct student demographic and program participation data prior to posting AYP results in August
- Provide the ability for only authorized LEA users to access the application environment

E. Promote good data management practices with respect to pupil data systems and issues (SB 257)

- Reduce the number of data collections needed for NCLB data elements
- Reduce the number of LEA appeals by 30 percent during the first full 12 months that CALPADS is in production as compared with the number of appeals during the prior 12 months when CALPADS was not in production
- Provide a system that can accurately accumulate student achievement data and has the ability to produce data sets of student records.

3.4 Business Functional Requirements

The project team developed functional requirements from those identified in Senate Bills 1453 and 257, as well as through the collaborative efforts of numerous CDE support program staff and the CALPADS advisory board formed by SB 1453. **Exhibit 3-2**, on the following pages, presents a compilation of functional requirements for CALPADS. Most functional requirements are relevant to more than one goal. Exhibit 3-2 lists each functional requirement under the first CALPADS goal that it supports.

Most of the data needed for CALPADS originate at schools, specifically for each student. The CDE has identified the specific student-level, teacher-level and school-level data elements that CALPADS must collect in order to provide LEAs and the CDE "*access to data necessary to comply with federal reporting requirements delineated in the No Child Left Behind Act of 2001*" (California Education Code (§60900 (d))). **Appendix A** and **Appendix B** to this FSR provide NCLB reporting requirements and the specific data elements needed to support NCLB reporting. A functional requirement of CALPADS is to provide access to these data elements.

Senate Bill 1453 requires that LEAs retain pupil achievement data from assessments that include, to the extent possible, subscore data within each content area. This is a functional requirement for CALPADS identified in Exhibit 3-2. The CDE reviewed the assessments and identified the subscores for each of the statewide assessments. Results of this review are presented in **Appendix C** to this FSR.

Exhibit 3.2 Functional Requirements

Opportunity	Functional Requirement
A. Provide school districts and the CDE access to data necessary to comply with federal NCLB reporting requirements	1. Provide school districts and the CDE access to data needed to calculate and produce academic performance index (API), adequate yearly progress (AYP), highly qualified teacher metrics, and other NCLB reporting requirements (SB 1453) 2. Enable the CDE to process and integrate assessment records from assessment vendors that have been staged, compressed, and signed-off on by CDE authorized standards and assessment management 3. Enable the CDE to capture and maintain information (data elements) from LEAs and Test Vendors required to comply with federal reporting requirements delineated in the No Child Left Behind Act of 2001 4. Utilize and capture the unique student identifier assigned by the California Student Information Services (CSIS) program and submitted by LEAs as the primary student identifier 5. Enable LEAs to submit student-level demographic, program participation, enrollment and graduation information (enrollment date and/or leaver code) to meet Title I NCLB reporting requirements 6. Enable the CDE to interface with the California Commission on Teacher Credentialing (CTC) database to obtain required data elements 7. Enable the CDE to capture and maintain information from LEAs on each employed teacher required to prepare NCLB reports on highly qualified teachers to meet Title II NCLB reporting requirements 8. Enable the CDE to capture and maintain from LEAs information on each instructional paraprofessional employed in programs supported by Title I funds to prepare NCLB reports on highly qualified paraprofessionals to meet Title II NCLB reporting requirements 9. Enable the CDE and LEAs to determine a student's demographic and program participation information at any time (before and after assessment testing) 10. Enable the CDE to collect information from LEAs on each incidence of violence or drug use, linked to the unique student ID for the offender (allowing the CDE to prepare aggregate reports required to satisfy NCLB requirements related to "persistently dangerous" schools and the gun-free schools act) 11. Support the ability to reload or update student-level demographic, program participation, and enrollment information from LEAs (necessary when LEAs correct this information) 12. Provide an audit tracking capability for student level data by date of submission and source of change (e.g., data source such as LEA, test vendor, etc.) 13. Allow authorized LEA users access to LEA data as needed including the capability to download data, as needed 14. Provide authorized LEA users access to specific student records via their unique ID during a new student or student transfer enrollment process

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Exhibit 3.2 Functional Requirements *(continued)*

Opportunity	Functional Requirement
B. Provide a better means of evaluating educational progress and investments over time	15. Support access to longitudinal pupil data to assess the long-term value of educational investments and programs (SB 1453) 16. Support the research basis for improving pupil performance (SB 1453) 17. Support sorting of student assessment records by the demographic and program participation elements that are currently collected from the STAR tests, high school exit examination, and English language development test (SB 1453) 18. Support access to student-level achievements from multiple years on the STAR tests, high school exit examination, and English language development test (SB 1453) 19. Enable the CDE and LEAs to accurately monitor pupil achievement on the STAR tests, high school exit examination, and English language development test from year to year and school to school (SB 1453) 20. Provide data to authorized state and local education agencies upon their request (SB 1453) 21. Enable the CDE to capture and maintain pupil achievement data from assessments administered pursuant to the STAR, high school exit examination, and English language development testing programs, including subscore data within each content area (SB 1453) 22. Enable the CDE and LEA staff to analyze confidential and public data from CALPADS, conduct research, and fulfill other statutory and regulatory state and federal reporting requirements 23. Enable the CDE and LEAs to disaggregate test results by subscore, as defined, for the STAR tests, high school exit examination, and English language development test 24. Support authorized user access to standard reports of granular and aggregate information, viewable using a web browser, 25. Retain historical data based on determined program need or twenty years (grades K-18), whichever is greater 26. Allow scores to be identified as “invalid” on the English language development test (e.g., a blind student may have been read the reading test, resulting in a score, but one that is not valid)

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Exhibit 3.2 Functional Requirements *(continued)*

Opportunity	Functional Requirement
C. Provide local education agencies information that can be used to improve pupil achievement	27. Support full integration of statewide assessment data in a single, integrated relational database management system accessible by CDE, LEAs, and authorized researchers 28. Enable authorized users to access appropriate CALPADS functions and data based on their role and access rules 29. Protect the integrity and availability of data stored within the CALPADS repository and the system itself 30. Support a minimum of 16/7, Web-based, rules-based, self-service viewing of assessment results for authorized users 31. Enable the CDE to capture English language development test results at least monthly 32. Provide end user training to 2,000 LEA personnel and approximately 18 CDE program staff, and provide system training to 10 CDE staff 33. Provide appropriate system maintenance and operations training to 20 CDE staff

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Exhibit 3.2 Functional Requirements *(continued)*

Opportunity	Functional Requirement
D. Provide an efficient, flexible, and secure means of maintaining longitudinal statewide pupil level data	34. Ensure that data elements and codes included in the system comply with state and federal privacy statutes and regulations identified in Education Code Section 60900 (g) (SB 1453) 35. Support online data entry of student level demographic data via a dedicated, Web-based portal hosted by the CDE 36. Support batch submission of data in a standard flat file format per CDE data interchange specifications 37. Support batch submission of data per Schools Interoperability Framework (SIF) compliant, extensible markup language (XML) data streams 38. Support a single, standard format for student-level test result records submitted by assessment vendors 39. Support a single, standard format for data exchange with the assessment vendors to support the LEA pre-identification process 40. Provide edits and validations of LEA submitted student level data enforcing defined data submission requirements 41. Produce a *Data Review Report* that allows LEAs to view and verify submitted demographic and program participation data and allow LEAs to submit changes 42. Automatically alert LEAs of any outlier data (e.g., possibly the result of coding errors) 43. Support concise error messages and corresponding message numbers for all errors detected 44. Support the capability to mass update student demographic data (i.e., replace one set of data or text with another throughout all student records, or group of student records, to correct a common coding error in demographic data) 45. Allow LEAs to resubmit student demographic data after official deadlines have passed for publishing assessment results that require this information 46. Enable LEA end users to authenticate and access appropriate applications and data 47. Use current CDE network security for required authentication 48. Ensure system performance to accommodate large data sets and perform rapid query functions using these data sets 49. Comply with CDE standards for software development, technology standards, and open communication 50. Provide LEAs alternative means to submit demographic data to CALPADS, including an FTP site and a web-based on-line automated application 51. Support routine audit functions and automatically forward exceptions for staff review 52. Record and audit all changes to transaction data, and identify the date, time, and individual that made each change 53. Perform daily backup processes & develop system recovery procedures 54. Support tracking of researcher requests for CALPADS data to comply with FERPA and state privacy requirements

(continued on next page)

Exhibit 3.2 Functional Requirements *(continued)*

Opportunity	Functional Requirement
E. Promote good data management practices with respect to pupil data systems and issues	55. Provide a full-function robust ad-hoc report writer to enable the CDE to respond to the CDE program areas, researchers, and other policy maker requests (*Produce analyzable files for approved users (SB 257))* 56. Maintain a unique student identifier to link pupil data with other agencies and to enable the ability to monitor pupil progress in postsecondary education *(Link pupil data with data from other agencies and users, including a mechanism to monitor pupil progress in postsecondary education (SB 257)*) 57. Support specific categories of users and uses for pupil data and support approval and servicing users (SB 257) 58. Support and post privacy and data access protocols, criteria, and procedures for use that are developed in a manner consistent with recommendations of the CDE's advisory committee on privacy and data protocol (SB 257) 59. Enable updating or adding of student-level assessment results provided by assessment vendors based on appropriate business rules 60. Comply with CDE's "preferred variation"[9] of each data element 61. Comply with CDE hardware, software, and database architecture standards 62. Comply with CDE's *Web Standards for Contractors and Vendors*, which establish standards for web content 63. Support single-sign-on capabilities to application environment 64. Support individual, role-based security and access control to all data based on sign-on id 65. Enable the CDE and LEAs to extract individual student-level records, while maintaining confidentiality of the student information following defined access and privacy policies 66. Support point-and-click functionality 67. Support authorized LEA users to access the application environment via a secured Internet connection 68. Support up to 24 / 7, Internet and intranet access to CALPADS 69. Enable web-based flexible, on-line ad hoc report generation capabilities. 70. Enable web-based flexible, on-line query and data extract capabilities 71. Enable web-based context-sensitive help function

[9] This is the standard data element name, definition, code set value, etc. established under CDE's Common Data Architecture.

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4 Baseline Analysis

This section of the feasibility study report reviews the California Department of Education's (CDE's) current methods and information systems to support the collection and reporting of federal No Child Left Behind Act of 2001 (NCLB) data and information. Reviewing existing methods and the information systems that support them provides an understanding of the managerial and technical implications associated with the problems and opportunities presented previously, and provides a baseline against which to measure potential changes.

The remainder of this section is organized as follows:

4.1. Current Method

4.2. Technical Environment.

4.1 Current Method

Exhibit 4-1, on the following page, identifies data collection instruments and reporting methods and systems the CDE currently uses to meet NCLB reporting requirements.

4.1.1 Current Data Collection and Reporting Process

The workflow presented in **Exhibit 4-2**, following Exhibit 4-1, provides a broad overview of current NCLB data collection and reporting processes.

The pages that follow present a description of the processes summarized in Exhibit 4-2, by NCLB Title.

4.1.1.1 Title I: Part A: Improving Basic Programs Operated by LEAs

The high-level processes described below represent the general case. The exact process performed by a given Local Education Agency (LEA) will vary somewhat from what is described below, depending on LEA size, LEA level of automation, and whether the LEA uses CSIS for data submission.

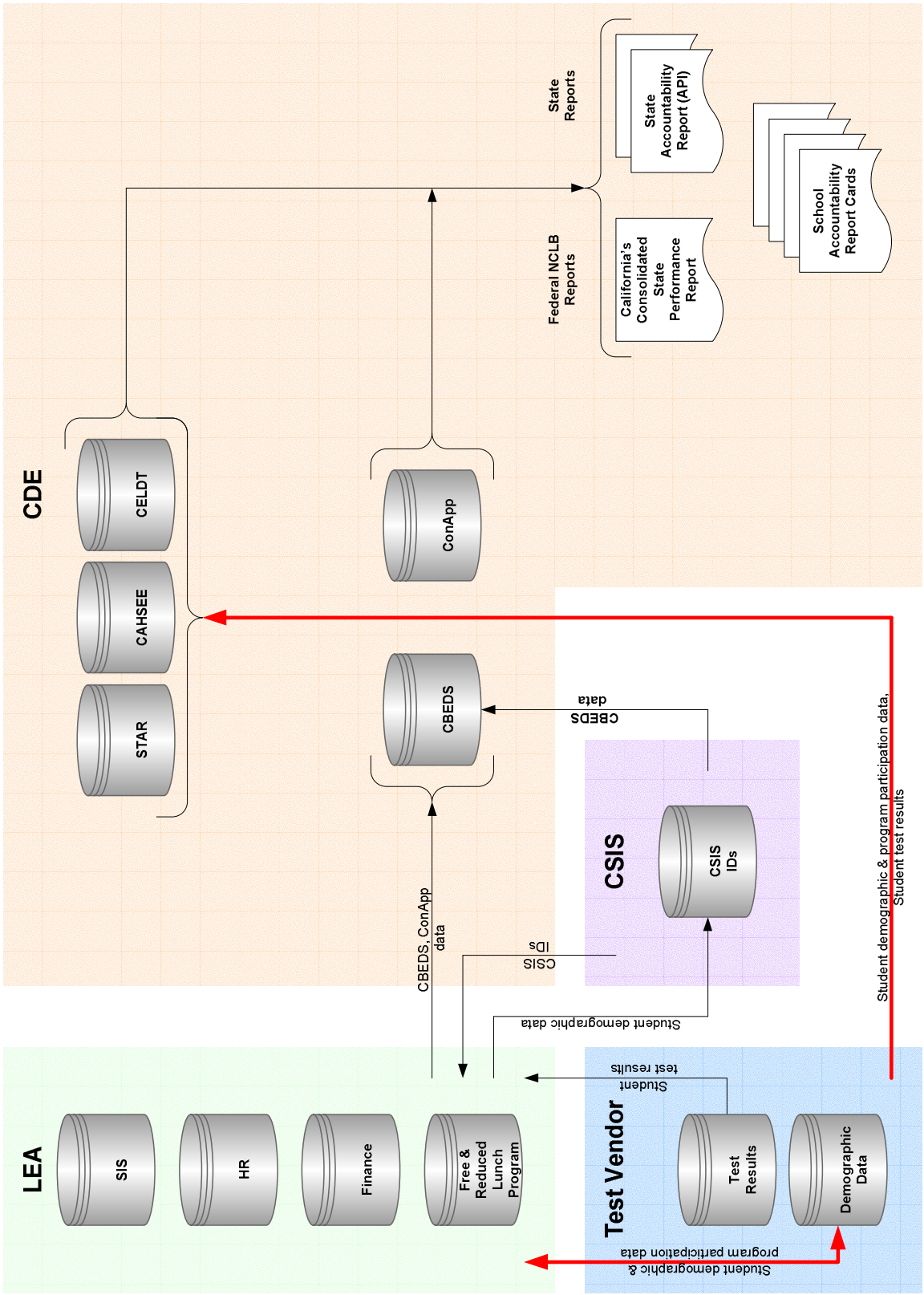
4.1.1.1.1 STAR Program

- Approximately 75 percent of LEAs (representing 95 percent of all students) prepare and submit student information required on statewide assessment header sheets to test vendors in advance of the test. This pre-identification (or, "pre-ID") process includes a test vendor-assigned administration code. The remainder of LEAs manually bubble assessment forms at the time of test administration.

Exhibit 4-1 Data Collection Instruments, and Reporting Methods and Systems, by NCLB Title

NCLB Title / Program	CDE Data Collection Instrument	CDE Data Collection and Reporting Method / System
Title I: Part A: Improving Basic Programs Operated by LEAs	Standardized Testing and Reporting (STAR) program test form	STAR test vendor; STAR test results reported on http://star.cde.ca.gov
	California High School Exit Examination (CAHSEE) test form	CAHSEE test vendor; CAHSEE test results reported on http://data1.cde.ca.gov/dataquest
	2004-2005 Consolidated Application for Funding Categorical Aid Programs (Part I) (ConApp) forms	ConApp Data System
	California Basic Educational Data System (CBEDS) School Information Form (SIF)	CBEDS data entry application
	CBEDS SIF (CSIS participating LEAs)	California School Information Services (CSIS)
Title II: Preparing, Training, and Recruiting High Quality Teachers and Principals	CBEDS Professional Assignment Information Form (PAIF) and SIF	CBEDS data entry application
	CBEDS PAIF and SIF (CSIS participating LEAs)	California School Information Services (CSIS)
	ConApp Part I forms	ConApp data system
Title III: Part A: English Language Acquisition, Language Enhancement, and Academic Achievement Act	California English Language Development Test (CELDT) test form	CELDT test vendor; CELDT test results reported on http://data1.cde.ca.gov/dataquest
	Language Census Form (R30-LC)	CBEDS Data Entry Application
	R30-LC (CSIS participating LEAs)	California School Information Services (CSIS)
Title IV: Part A: Safe and Drug-Free Schools and Communities	ConApp Part I forms	ConApp Data System
	California Healthy Kids Survey Annual Report	Not stored
Title IX: Part E Uniform Provisions (Unsafe School Choice Option)	ConApp Part I forms	ConApp Data System

Exhibit 4-2 Current NCLB Data Collection and Reporting Process



- For participating LEAs, the test vendor "pre-slugs" assessment header sheets with pre-ID information (student name, address, and other demographic and program participation information) received from LEAs. The test vendor sends pre-slugged assessment forms to each participating LEA prior to test administration.
- LEA personnel manually bubble assessment forms for those students taking the STAR exam that do not have pre-slugged forms, and when information is required at the time of testing, such as accommodations.
- After proctoring the STAR exam, each LEA submits assessment forms for each enrolled student to the test vendor for scoring, including forms for those students that were absent on test day. The CDE utilizes incomplete forms to calculate the participation rate.
- After scoring STAR exams, the test vendor creates a set of CDs for each LEA and CDE. Each two-CD data set prepared for the LEAs contains student-level data, including name, address, demographic and program participation data, and STAR exam results at the sub-score level. The 27-CD data set prepared for CDE includes student-level demographic and program participation data, and STAR exam results. The set of CDs prepared for CDE does not include personally identifiable information for each student, but does include each student's item-level responses.
- The CDE Standards and Assessments Division, Testing and Reporting Office strips the item-level responses out of the data set received from the test vendor to prepare a set of four CDs for use by the CDE Policy and Evaluation Division. Using this data set, the Policy and Evaluation Division determines whether each school is meeting its Annual Measurable Objectives (AMOs) under NCLB.
- By August 31 each year, the Policy and Evaluation Division posts preliminary academic performance index (API) and adequate yearly progress (AYP) results for each LEA, disaggregated by demographic and program participation subgroup, to give LEAs an opportunity to review their preliminary results at the subgroup level.
- By the end of August each year, the Policy and Evaluation Division posts a report showing which schools failed to meet AYP and are now subject to program improvement, based on prior performance.
- The LEAs use a secure website hosted by the test vendor to perform any necessary cleansing of demographic and program participation data for their students to determine whether they fall into correct subgroups.
- At the close of the data review period, the test vendor submits a new 27-CD data set to the Standards and Assessments Division, Testing and Reporting Office. The CDE Standards and Assessments Division, Testing and Reporting Office then strips the item-level responses out of the revised data set received from the test vendor to prepare a new set of four CDs for use by the Policy and Evaluation Division. Using this data set, the Policy and Evaluation Division prepares final API and AYP results for each school.
- By the end of October each year, the Policy and Evaluation Division posts final API and AYP results for each school, disaggregated by demographic subgroup. The CDE provides STAR exam results to the public via CDE's DataQuest website. The DataQuest website provides a link to the STAR website, which is hosted by CDE and maintained by the test vendor. Here, the public can view exam results via pre-defined queries and reports.

4.1.1.1.2 CAHSEE

- Each participating LEA prepares and submits pre-ID information for each high school student, grade 10 and above, to be tested, including the test vendor-assigned administration code. The LEA performs this task, even in those cases where the LEA already submitted pre-ID information for the student, for a prior administration of the CAHSEE in the same year.
- For participating LEAs, the test vendor pre-slugs assessment forms with pre-ID information received from LEAs. This information includes student name, school and district names, date of birth, gender, student identifier, county-district-school (CDS) code, and information indicating if student has met the requirement for either English language arts or mathematics. The test vendor sends pre-slugged assessment forms to each participating LEA prior to test administration.
- LEA personnel manually bubble assessment forms for those students taking the CAHSEE that do not have pre-slugged forms.
- After proctoring the CAHSEE, each LEA submits assessment forms for each enrolled student to the test vendor for scoring, including forms for those tenth grade students during the census/main administration who were absent on either test day.
- After scoring the CAHSEE, the test vendor creates two CDs for each LEA and two CDs for the CDE. Each two-CD data set prepared for LEAs contains a detail file containing student-level data, including name, address, demographic and program participation data, and CAHSEE results at the sub-score level (10 sub-scores for math and six sub-scores for language arts), and an aggregate file containing sub-score level CAHSEE results disaggregated by demographic subgroup. The two-CD data set prepared for the CDE contains a detail file with student-level demographic and program participation data, and CAHSEE results at the sub-score level (10 sub-scores for math and six sub-scores for language arts), and an aggregate file containing sub-score level CAHSEE results disaggregated by demographic subgroup. The CDs prepared for the CDE do not include any personally identifiable information. The CDE uses the overall math and language arts scores to determine whether high schools are meeting their AMOs, and the CDE uses subscores in reporting CAHSEE results to the public.
- The CDE Standards and Assessments Division, High School Exit Exam Office performs quality assurance on the CDs received from the test vendor, and then passes the CD containing the detail file to the Policy and Evaluation Division for their use in determining API and AYP.
- The High School Exit Exam Office provides CAHSEE results for CDE's DataQuest website, where the public can view exam results via pre-defined queries and reports.
- The CDE uses CAHSEE English language arts and math scores in calculating a high school's API.[1] The Policy and Evaluation Division will use CAHSEE results to measure progress against AMOs, starting with the graduating class of 2006.
- The CDE provides LEAs three data correction windows each year to update demographic fields.

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[1] Source: http://www.cde.ca.gov/ta/ac/ap/apidescription.asp

4.1.1.1.3 ConApp Part I

- The CDE administers ConApp Part I in May-June of each year to collect information for the upcoming school year. Several data elements collected in the 16 pages of ConApp Part I are required to meet NCLB Title I, Part A reporting requirements. Pages 2, 3, 5, 6, 10, 11, and 12 all contain data elements that are pertinent to Title I, Part A. The CDE collects a number of these elements at a summary level for each LEA, rather than at the student level.
- The majority of LEAs use a Visual FoxPro-based ConApp Data System, developed by the CDE, to submit ConApp Part I forms. A number of other LEAs choose to submit data for ConApp Part I via flat files that conform to the current ConApp Part I flat file specification. In all cases, LEAs submit their ConApp Part I data to the CDE via file transfer protocol (FTP)[2] on a secure FTP site hosted at the CDE.
- The CDE Data Management Division, Education Data Office consolidates flat files received from each LEA via the CDE FTP site into a Visual FoxPro database. The Education Data Office stores this file on a file server attached to the CDE's Novell network.
- The CDE Education Data Office creates several data extracts from this 20 MB database for use by the various ConApp Part I offices responsible for administering programs represented on the ConApp. Tabular data are typically passed from the Education Data Office to the program offices in the form of Excel spreadsheets.
- ConApp Part I program offices use these data extracts to generate reports required by NCLB Titles I, II, III, IV, and IX.

4.1.1.1.4 CBEDS School Information Form (SIF)

- The CDE administers CBEDS in October each year to collect information for the current school year. Summary enrollment, graduation, and dropout data collected on pages 1 and 2 of the CBEDS SIF are required to meet NCLB reporting requirements related to Title I, Part A.
- The majority of LEAs use the CBEDS data entry application to submit CBEDS data to CDE. Other LEAs choose to submit flat files generated from their own education administration information systems, per the current CBEDS flat file specification. Approximately 200 LEAs submit CBEDS data to CDE via CSIS, which is further described in the section that follows. In all cases, CBEDS data are submitted to CDE via FTP on a secure FTP site hosted at the CDE.
- The CDE Data Management Division, Educational Demographics Office consolidates CBEDS data received from each LEA via the CDE FTP site into a SQL Server[3] database.

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[2] File transfer protocol is a protocol used to transfer files over a TCP/IP network (Internet, UNIX, etc.). It includes functions to log onto the network, list directories, and copy files. Unlike e-mail programs in which graphics and program files have to be "attached," FTP is designed to handle binary files directly and does not add the overhead of encoding and decoding the data.

[3] SQL Server is a relational database management system from Microsoft that includes management and development tools, and extraction, transformation, and load tools. SQL, or structured query

The Educational Demographics Offices stores this database on one of CDE's database servers. The Education Demographics Office performs a series of edit checks to quality assure the data received from the LEAs and coordinates with LEAs, as necessary to cleanse their data.

- Once the Education Demographics Office is satisfied with SIF data, Department of Finance (Finance) statisticians assist the Office with a series of quality checks termed "statewide reasonabilities." When CDE and Finance are both satisfied with SIF data, the CDE posts the data to CDE's DataQuest website, where it is accessible by the public via pre-defined queries and reports.
- The Policy and Evaluation Division uses the summary enrollment, graduation, and dropout data collected via the SIF from each LEA to generate the high school graduation rate indicator of the AYP for each high school. The Division uses a "synthetic" graduation rate for each high school using four years of graduation and dropout data.
- As previously mentioned, the Policy and Evaluation Division posts final API and AYP results for each school at the end of August each year, disaggregated by demographic subgroup. Under NCLB, graduation rates are factored into the AYP calculation for high schools, both overall and disaggregated by demographic subgroup.

4.1.1.1.5 CBEDS SIF via CSIS

- Approximately 200 LEAs use CSIS as an alternative data collection and reporting mechanism to submit CBEDS CDIF, SIF, and PAIF data to the CDE.
- In addition to CBEDS CDIF, SIF, and PAIF data, CSIS collects enrollment, graduation, and dropout data at the student level, which makes possible more accurate computation of graduation and dropout rates than can be accomplished with the summary enrollment, graduation, and dropout data currently collected via the CBEDS SIF.
- Because CSIS collects student-level data from LEAs via the Internet, CSIS utilizes a robust security scheme to address privacy and confidentiality issues concerning the transfer of these data.

4.1.1.2 Title II: Preparing, Training, and Recruiting High Quality Teachers and Principals

The high-level processes described under Title I, Part A for ConApp Part I, CBEDS, and CSIS, generally apply to Title II, Part A as well. The processes described below call out notable differences, relative to the processes previously described.

4.1.1.2.1 CBEDS PAIF and SIF

- Some of the data elements currently collected on the CBEDS PAIF and SIF are required to meet NCLB reporting requirements related to Title II, Part A: Preparing, Training, and Recruiting High Quality Teachers and Principals. The CDE will add three data elements to the PAIF for the 2005 Fall submission to enable the CDE to report the percentage of core courses taught by highly qualified teachers, as required by NCLB Title II, Part A.

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language, is used to interrogate and process data in a relational database. All database systems designed for client/server environments support SQL.

- LEAs submit data collected via the PAIF in the same way as previously described for SIF data. The Educational Demographics Office consolidates the PAIF data received from each LEA into a SQL Server database using methods similar to those applied to SIF data.
- The Education Demographics Office performs a series of edit checks to quality assure the PAIF data received from the LEAs and coordinates with LEAs, as necessary, to cleanse their data. Once CDE is satisfied with the PAIF data, the CDE posts the data to CDE's DataQuest website, where it is accessible by the public via pre-defined queries and reports.
- The Education Demographics Office passes consolidated PAIF data to the CDE Professional Development & Curriculum Support Division as a Microsoft Access database.

4.1.1.2.2 CBEDS PAIF and SIF via CSIS

- As previously stated, approximately 200 LEAs use CSIS as an alternative data collection and reporting mechanism to submit CBEDS CDIF, SIF, and PAIF data to CDE.
- Professional assignment data collected via CSIS is the same as that collected via the CBEDS PAIF.

4.1.1.2.3 ConApp Part I

- Data currently collected on page 15 of ConApp Part I are required to meet NCLB reporting requirements related to Title II, Part A.
- LEAs submit highly qualified teacher data collected via page 15 of ConApp Part I in the same way as previously described for other ConApp Part I data. The Education Data Office consolidates high quality teacher data from page 15 of ConApp Part I in the same way as for other ConApp Part I data.
- The Education Data Office provides an extract of highly qualified teacher data to the Professional Development & Curriculum Support Division. These data are passed from the Education Data Office to the Professional Development & Curriculum Support Division as a Visual FoxPro database.
- The Professional Development & Curriculum Support Division (PDCSD) merges data received from the Education Data Office with high poverty schools data received from the School Fiscal Services Division into a Microsoft Access database. The Division uses this database to determine and report: (1) the percentage of core courses being taught by highly qualified teachers, (2) the percentage of core courses being taught by highly qualified teachers in the highest and lowest poverty quartile schools, (3) the percentage of teachers receiving quality professional development, and (4) the percentage of NCLB-compliant paraprofessionals.

4.1.1.3 Title III: Part A: English Language Acquisition, Language Enhancement, and Academic Achievement Act

The high-level processes described below represent the general case. The exact process performed by a given LEA will vary somewhat from what is described below, depending on the

size of the LEA, the level of automation within the LEA, the number of English language learners, and the degree of student mobility within the LEA.

4.1.1.3.1 CELDT

- LEAs administer the CELDT annually for all students previously identified as English learners, and on an as-needed basis for incoming students whose home language is not English. Statute requires that a CELDT score be on record or the test be administered within 30 days of a student enrolling at the school.
- For the annual CELDT, approximately 75 percent of LEAs (representing 95 percent of all students) prepare and submit pre-ID information for each English learner to be tested, including the test vendor-assigned administration code. The remainder of LEAs manually bubble assessment forms at the time of the annual CELDT. Regardless of whether LEAs pre-ID for the annual CELDT, Title III, Part A requires LEAs to submit an English learner's prior year CELDT score to measure the student's rate of growth for English language acquisition.
- For the annual CELDT, the test vendor pre-slugs assessment forms for each LEA with pre-ID information (student name, address, other demographic and program participation information, and prior year CELDT score) received from LEAs. The test vendor sends pre-slugged assessment forms to each participating LEA prior to the annual CELDT.
- LEA personnel manually bubble assessment forms for those English learners taking the annual CELDT that do not have pre-slugged forms.
- There is a limited pre-ID process for incoming students taking the CELDT who enroll during the annual window of the CELDT. Therefore, LEA personnel manually bubble assessment forms for most incoming students when they take the CELDT. The CELDT must be administered to an incoming student within 30 calendar days if the student does not have a previous English language proficiency score, or their score is not known.
- After scoring annual CELDTs, the test vendor generates an ASCII[4] flat file of the consolidated exam results for each English learner and sends the file to the CDE Standards and Assessment Division, Assessment Office via FTP or on CDs every December – January. The test vendor sends test results for each English learner to each LEA on CDs monthly. The file prepared for the Assessment Office does not include personally identifiable information for each student, but does include each student's item-level responses. The files prepared for the LEAs include personally identifiable information for each student, but do not include item-level responses.
- The test vendor scores CELDTs taken by incoming students on an event-driven basis and reports each student's test results back to the appropriate LEA. The test vendor collects exam results for incoming students and submits them to the Assessment Office every November in the manner described above.

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[4] American Standard Code for Information Interchange, pronounced "ask-ee." A binary code for text, as well as for communications and printer control. It is used for most communications and is the built-in character code in all personal computers.

- Beginning for school year 2003/04, there is a data correction window for CELDT for tests submitted during the annual window. After scoring the CELDTs submitted between July 1 and October 31 (both initial and annual tests), the test vendor will post results to a secure website accessible only by LEAs. The LEAs will use this website to perform necessary cleansing of demographic and program participation data for their students. The LEAs also will be allowed to provide prior year test scores for students whose scores are missing or inaccurate.
- The Assessment Office loads flat files received from the test vendor into SAS[5] and strips the item-level responses out of the SAS data set and gives a copy of the stripped SAS data set to the CDE Language Policy and Leadership Office for further analysis.
- The Language Policy and Leadership Office merges consolidated CELDT results for each student with the Title III database into a SAS data file. The office uses SAS to produce required NCLB Title III, Part A accountability reports.
- The Educational Demographics Office combines consolidated CELDT results from the Assessment Office with NCLB accountability report data from the Language Policy and Leadership Office into a SQL Server database. The office uses this database to make CELDT results and Title III reports available to the public via CDE's DataQuest website.

4.1.1.4 Title IV: Part A: Safe and Drug-Free Schools and Communities

The high-level processes described below represent the general case. All LEAs, with the exception of the Los Angeles Unified School District (LAUSD), submit data required for Title IV, Part A via ConApp Part I. LAUSD submits Title IV, Part A data via FTP using the ConApp Part I flat file specification.

4.1.1.4.1 ConApp Part I

- Data currently collected on pages 4 and 9 of ConApp Part I are required to meet NCLB reporting requirements related to Title IV, Part A.
- LEAs submit student suspension, expulsion and other data on students who have brought firearms to school on page 9 of ConApp Part I. Data are collected and submitted in the same way as previously described for other ConApp Part I data. Likewise, the Education Data Office consolidates the Gun-Free Schools Act data from page 9 of ConApp Part I in the same way as for other ConApp Part I data.
- The Education Data Office generates a report from the consolidated ConApp Part I database to meet Title IV NCLB reporting requirements.

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[5] SAS Institute Inc., Cary, NC. A software company that specializes in data warehousing and decision support software based on the SAS System. The SAS System, originally called the "Statistical Analysis System," is an integrated set of data management and decision support tools from SAS that runs on platforms from PCs to mainframes.

4.1.1.5 Title IX: Part E: Uniform Provisions (Unsafe School Choice Option)

The high-level processes described below represent the general case. All LEAs with the exception of the LAUSD submit data required for Title IX via ConApp Part I. LAUSD submits Title IX data via FTP using the ConApp Part I flat file specification.

4.1.1.5.1 ConApp Part I

- Data currently collected on page 13 of ConApp Part I are required to meet NCLB reporting requirements related to Title IX, Part E, within which is the unsafe schools choice option.
- LEAs submit student truancy, expulsion, suspension, and other data on students who have committed serious offenses at school on page 13 of ConApp Part I. Data are collected and submitted in the same way as previously described for other ConApp Part I data. Likewise, the Education Data Office consolidates the persistently dangerous schools and uniform management information reporting system data from page 13 of ConApp Part I in the same way as for other ConApp Part I data.
- The Education Data Office generates a report from the ConApp Part I database to meet Title IX NCLB reporting requirements. The report includes only those schools that meet the threshold defined for persistently dangerous schools.

4.1.2 Characteristics of Existing Information Systems

Exhibits 4-3 through **4-8** summarize the following information systems currently used by CDE to support NCLB data collection and reporting:

- Standardized Testing and Reporting (STAR) program
- California High School Exit Examination (CAHSEE)
- 2004-2005 Consolidated Application for Funding Categorical Aid Programs (Part I) (ConApp)
- California Basic Educational Data System (CBEDS)
- California School Information Services (CSIS) – State Reporting
- California English Language Development Test (CELDT).

These six exhibits provide the number of entities for which each system collects data. The source for these counts is the CDE's data resource guide, except for CAHSEE and CELDT. For these two systems, CDE program staff provided the counts.

4.1.2.1 Standardized Testing and Reporting (STAR) Program

Exhibit 4-3, starting on page 4-13, summarizes the role of STAR in CDE's overall student performance assessment program and in meeting the CDE's data collection and reporting requirements for NCLB Title I, Part A.

4.1.2.1.1 Failures of the Current System to Meet the Objectives and Functional Requirements of an Acceptable Response to the Problem or Opportunity

The current process of collecting student-level demographic and program participation data, together with assessment data, via STAR test forms poses a challenge for both the LEAs and the CDE, and has unintended consequences for schools. The CDE does not have an opportunity to subject data received from the LEAs to rigorous edit and reasonableness checks until after test data have been received from the test vendor.

Not being able to review data limits LEAs' opportunity to cleanse the data before CDE is required to post final AYP results. This has led to erroneously designating some schools as candidates for program improvement (PI), which requires schools to offer school choice and supplemental services to eligible students. This has a significant impact on schools, the parents or guardians of students, and the students themselves, as school choice decisions get made on erroneous information. School reputations are damaged unnecessarily and school budgets are subjected to additional strain. Schools initially identified for PI, but after further data cleansing are identified as not being in PI must continue to offer choice for the entire year even though they are not in PI.

In response to NCLB, Senate Bill 1453 and Senate Bill 257 call for the longitudinal collection and storage of student-level demographic, program participation, and assessment data to facilitate the evaluation of educational program effectiveness. At the present time, the CDE has no capability to collect and store student-level STAR assessment data longitudinally. Consequently, the CDE is unable to meet this legislative mandate for STAR assessment data.

4.1.2.2 California High School Exit Examination (CAHSEE)

Exhibit 4-4, following Exhibit 4-3, summarizes the role of CAHSEE in the CDE's overall student performance assessment program and in meeting the CDE's data collection and reporting requirements for NCLB Title I, Part A.

Exhibit 4-3 STAR Program Summary

CDE Data Collection Method / System	
Standardized Testing and Reporting (STAR) Program	
Description	
The California standards tests (CSTs) are given to public school students in grades 2 through 11 as part of the state's Standardized Testing and Reporting (STAR) Program. Enacted into law in 1997. The STAR Program currently has three components, in addition to the California CSTs: (1) the California Alternate Performance Assessment (CAPA), (2) the California Achievement Tests, Sixth Edition Survey (CAT/6), and (3) the Spanish Assessment of Basic Education, Second Edition (SABE/2). The CSTs are aligned to state academic content standards and include tests in English-language arts and mathematics in grades 2 through 11, writing tests in grades 4 and 7, history-social science tests in grades 8, 10, and 11, and science tests in grades 9 through 11. The STAR Program currently features four components designated by the State Board of Education: (1) CSTs, produced for California public schools; (2) CAPA, produced for California public school students with significant cognitive disabilities; (3) CAT/6 for norm-referenced achievement testing (NRT); and (4) SABE/2 for measuring academic proficiency for students with limited English proficiency.	
Data Subjects Reported	
CST, CAPA, and CAT/6 students: 4,700,000 SABE/2 students: 102,000	
Data Collected	
Academic achievement	Mobility
Attendance/Enrollment	Parent data
Education agency	Special Education
Food and nutrition	Student demographic
Information Security, Privacy, and Confidentiality	
Student-level demographic, program participation and assessment data delivered from the test vendors to the CDE do not include item-level detail and do not include personally identifiable information. Student performance data disaggregated by demographic and program participation data elements is displayed via pre-defined queries and reports that are executable from the CDE's STAR website, which is accessible by the public. However, student performance data is not displayed where disaggregating include 10 or fewer students.	
Collection Frequency	
Annually	
Key Dates	
SABE/2 and CST: Public date – Aug 15	CAPA, CST, and CAT/6: Due date – Dec 3 Public date – Dec 10

(continued on next page)

Exhibit 4-3 STAR Program Summary *(continued)*

Primary Use
Monitoring and evaluation
Reporting to the federal government
Reporting to the state government
Reporting to the public
State / Federal Programs Supported
California State Academic Performance Index (API)
NCLB: Title I: Part A: Improving Basic Programs Operated by LEAs
Data Users
CDE: Policy & Evaluation Division (Assessment and Accountability Branch); Data Management Division; Office of Deputy Superintendent; External educational organizations
Researchers
Public
Vendors
Dissemination Method(s)
Static HTML[6] reports
Web-based dynamic reports
Downloadable data files
Data Form
Microsoft SQL Server, Microsoft Excel, Microsoft Access, SAS
Documentation Available for this Data Collection Method / System
Administrative Manual and/or data product instructions
List of all data elements
Data dictionary containing at least the data element format and definitions
Procedures for verifying data accuracy
Procedures for changing data element structure
Location of stored data

[6] HyperText markup language, the document format used on the World Wide Web.

Exhibit 4-4 CAHSEE Program Summary

CDE Data Collection Method / System	
California High School Exit Examination (CAHSEE)	
Description	
State law, enacted in 1999, authorized development of the CAHSEE, which students in California must pass as a condition for receiving a high school diploma, beginning with the class of 2004- The State Board of Education was given legislative authority to subsequently change the requirement to first apply to the class of 2006. The purpose of the CAHSEE is to improve student achievement in high school and to help ensure that students who graduate from high school can demonstrate competency in English language arts and mathematics. All students are required to take the CAHSEE once in grade 10 in February or March, with a make-up in March or May. After grade 10, students are given up to five additional opportunities to retake the examination. Only parts not passed must be taken again.	
Data Subjects Reported	
Students: 504,000 (Class of 2006)	
Data Collected	
Academic achievement	Mobility
Attendance/Enrollment	Parent Data
Education Agency	Special Education
Food and Nutrition	Student demographics
Information Security, Privacy, and Confidentiality	
Student-level demographic, program participation, and assessment data delivered from test vendors to the CDE do not include student names. Student performance data disaggregated by demographic and program participation data elements are displayed via pre-defined queries and reports that are executable from the CDE's DataQuest website, which is accessible by the public. However, student performance data are not displayed where disaggregating includes 10 or fewer students.	
Collection Frequency	
Annually	
Key Dates	
Due date: Jul 23, Sept 14, and Nov 12 Public date: Oct 10	
Primary Use	
Monitoring and evaluation Reporting to the federal government Reporting to the state government Reporting to the public	
State / Federal Programs Supported	
NCLB: Title I, Part A: Improving Basic Programs Operated by LEAs NCLB: Title IV, Part A, Safe and Drug-Free Schools and Communities	

(continued on next page)

Exhibit 4-4 CAHSEE Program Summary *(continued)*

Data Users
CDE: Policy & Evaluation Division (Assessment and Accountability Branch), School & District Accountability Division (Assessment and Accountability Branch)
School administrators
Researchers
Dissemination Method(s)
Web-based dynamic reports
Downloadable data files
Data Form
Fixed length or delimited text file
Documentation Available for this Data Collection Method / System
List of all data elements
Data dictionary containing at least the data element format and definitions
Location of stored data
Other: Vendor maintained quality assurance procedures

4.1.2.2.1 Failures of the Current System to Meet the Objectives and Functional Requirements of an Acceptable Response to the Problem or Opportunity

The current process of collecting student-level demographic and program participation data, together with assessment data, via CAHSEE test forms poses several challenges for both the LEAs and the CDE, many of which are similar to those described in section 4.1.2.1.1, above, for STAR. In some respects, the problem for CAHSEE is even greater than for STAR, as the CAHSEE is administered five times during the year, requiring the collection of redundant demographic and program participation data multiple times during the year. Adding to the demographic and program participation data redundancies on the CAHSEE exam, the CAHSEE test form collects most of the same data that the STAR test form collects.

Under the best of circumstances, the process of data collection via CAHSEE is labor intensive. Under the worst of circumstances, the CAHSEE data collection process results in erroneously designating at least some schools as candidates for program improvement (PI), which requires schools to offer choice and supplemental services to eligible students. As in the case of STAR, this has a significant impact on schools, the parents or guardians of students, and the students themselves, as school choice decisions are made on erroneous information. School reputations are damaged unnecessarily and school budgets are subjected to additional strain.

At the present time, the CDE has no capability to collect and store student-level CAHSEE assessment data longitudinally. Consequently, the CDE is unable to meet this legislative mandate for CAHSEE assessment data.

4.1.2.3 2004-2005 Consolidated Application for Funding Categorical Aid Programs (Part I) (ConApp)

Exhibit 4-5, on the following two pages, summarizes the role of ConApp in meeting the CDE's data collection and reporting requirements for NCLB Title II, Title IV, Part A, and Title IX, Part E (unsafe school choice option).

Exhibit 4-5 ConApp Program Summary

CDE Data Collection Method / System	
2004-2005 Consolidated Application for Funding Categorical Aid Programs (Part I) (ConApp)	
Description	
The CDE uses ConApp to collect data for multiple state and federal, formula-driven categorical aid program applications submitted by county offices, school districts, and direct-funded charter schools. Annually, in June, each LEA submits Part I of the application to document participation in categorical programs and provide assurances that the district will comply with the legal requirements of each program. The CDE determines district entitlements by formulas contained in laws that created the programs. In the Fall of each year, each LEA submits Part II of the application, which contains district entitlements for each funded program. From each state and federal program entitlement, districts allocate funds for indirect costs of administration for programs operated by the district office, and for programs operated at schools.	
Data Subjects Reported	
School Sites: 9,342	
Data Collected	
Attendance / Enrollment	Food and Nutrition
Disciplinary	Learning Support
Early Childhood / Child Development	Special Education
Education Agency	Staffing Data
Fiscal	Student Demographic
Information Security, Privacy, and Confidentiality	
ConApp collects data summarized at the school, district, or county office level. It does not collect student-level data. All data collected via ConApp is public information. Therefore, there are no information security issues surrounding ConApp data.	
Collection Frequency	
Annually	
Key Dates	
Due date: June	
Primary Use	
Monitoring and evaluation Reporting to the federal government Reporting to the state government Reporting to the public Determining the allocation of funding for a grant or apportionment	

(continued on next page)

Exhibit 4-5 ConApp Program Summary *(continued)*

State / Federal Programs Supported
NCLB: Title I Part A Basic, Title I Part A Neglected, Title II: Preparing, Training, and Recruiting High Quality Teachers and Principals, Title III: Part A: English Language Acquisition, Language Enhancement, and Academic Achievement Act; Title IV: Part A: Safe and Drug-Free Schools and Communities; Title IX: Part E Uniform Provisions (unsafe school choice option); School Improvement Program (SIP) K-6 and SIP 7-12; Peer Assistance Review; Tobacco Use Prevention Education
Data Users
CDE: Learning Support & Partnerships Division (Curriculum & Instruction Branch), Policy & Evaluation Division (Assessment and Accountability Branch), Professional Development & Curriculum Support Division (Curriculum & Instruction Branch), School & District Accountability Division (Assessment and Accountability Branch), School Fiscal Services Division (Finance, Technical & Administration Branch)
U.S. Department of Education
Outside educational organizations
Researchers
Public
Vendors
Other federal agencies
Dissemination Method(s)
Custom data files
Data Form
Microsoft Visual FoxPro
Documentation Available for this Data Collection Method / System
Administrative manual and / or user instructions on the data product
List of all data elements
Data dictionary that contains at least the data element format and definitions
Procedures for verifying data accuracy
Location of stored data

4.1.2.3.1 Failures of the Current System to Meet the Objectives and Functional Requirements of an Acceptable Response to the Problem or Opportunity

Feedback received from CDE program staff that require the data collected on ConApp Part I indicates that they are generally satisfied with ConApp's ability to collect data needed to meet NCLB reporting requirements. The ConApp does create a reporting burden on LEAs.

4.1.2.4 California Basic Education Data System (CBEDS)

Exhibit 4-6, on the following two pages, summarizes the role of CBEDS in meeting CDE's data collection and reporting requirements for NCLB Title I: Part A, and Title II.

4.1.2.4.1 Failures of the Current System to Meet the Objectives and Functional Requirements of an Acceptable Response to the Problem or Opportunity

Feedback received from several stakeholders in the NCLB data collection and reporting process indicates that they are generally satisfied with CBEDS' ability to collect data needed to meet NCLB reporting requirements. However, CBEDS suffers from two critical shortcomings related to NCLB reporting:

- The collection and reporting of school-level enrollment, graduation, and dropout data is inadequate to meet the requirements of Title I, Part A. To meet these requirements, the CDE must collect student-level enrollment, graduation, and dropout data.
- The collection and reporting of teacher-level data is currently inadequate to meet the plan put forth by the CDE, and approved by the federal government, to meet Title II, Part A. To meet the requirements for Title II Part A, the CDE must collect teacher-level data on NCLB core courses taught and teacher qualifications to teach core courses.

Currently, the CDE does not have a method to collect statewide student-level enrollment, graduation, and dropout data to satisfy Title I, Part A NCLB reporting requirements. CSIS currently collects student-level enrollment data for approximately 200 participating LEAs and reports aggregate CBEDS data to the CDE on behalf of those LEAs.

To address the second shortcoming, the CDE has proposed, and the federal government has approved, modifying the PAIF to collect teacher-level data on NCLB core courses taught and teacher qualifications to teach core courses. This will first be done for the 2005/06 school year (although the CDE plans to make the form available, though not required, for the 2004/05 school year). The CDE also will modify the PAIF to collect a teacher credential number. This number will help the CDE to validate that teachers are qualified to teach specified courses, which will help the CDE meet its responsibility to monitor implementation of Title II requirements.

Exhibit 4-6 CBEDS Program Summary

CDE Data Collection Method / System
California Basic Educational Data System (CBEDS)
Description
CBEDS collects county, district, and school data on students and staff. There currently are three data collection forms for collecting this data. ❑ The County / District Information Form (CDIF) collects data specific to districts and county offices regarding the number of classified staff, gifted and talented education (GATE), adult education, service-learning / community service program availability, estimated number of teacher hires, high school graduation requirements (by subject area and number of units required), and student inter-district transfers. ❑ The School Information Form (SIF) collects data specific to schools on the number of classified staff, school enrollment, high school graduates (completing University of California or California State University entrance requirements, or completing a vocational sequence), enrollment in selected high school courses, vocational education enrollment, dropouts, alternative education, technology, class size reduction, education calendars, health centers, and NCLB reporting requirements. ❑ The Professional Assignment Information Form (PAIF) collects individual data on certificated staff including their education level, ethnicity, gender, birth date, years of educational service, course assignments, position, and teaching credentials.
Data Subjects Reported
School Sites: 9,437 (a)
Data Collected
Attendance / Enrollment Education agency Special education Staffing data Student demographic Professional Staff Assignment Other (classified staff, high school graduation requirements, administrative and pupil service, demographic, etc.)
Information Security, Privacy, and Confidentiality
Data gathered via CBEDS are summary data containing no personally identifiable information. Therefore, there are no information security issues surrounding CBEDS data.
Collection Frequency
Annually
Key Dates
CBEDS (CDIF, SIF, PAIF): Census date: October 1; Due date: October 27; Public date: June 1 and 15; Report date: June 1 **CBEDS Language Census (R30-LC):** Spring Submission

(continued on next page)

Exhibit 4-6 CBEDS Program Summary *(continued)*

Primary Use
Reporting to the federal government
Reporting to the public
Determining the allocation of funding for a grant or apportionment
State / Federal Programs Supported
NCLB: Title I: Part A: Improving Basic Programs Operated by LEAs; Title II: Preparing, Training, and Recruiting High Quality Teachers and Principals
California Education Code Sections 10600 - 10610
Data Users
CDE:
Assessment and Accountability Branch: Data Management Division, Policy & Evaluation Division, Standards and Assessment Division, and School & District Accountability Division
Curriculum and Instruction Branch: Learning Support & Partnership Division
Finance, Technology, & Administration Branch: School Fiscal Services Division and Fiscal & Administrative Services Division
School & District Operations Branch: Charter School Division:
Department of Finance
National Center for Educational Statistics
Researchers
Public
Vendors
Dissemination Method(s)
Custom hardcopy reports (on demand)
Static HTML reports
Web-based dynamic reports
Downloadable data files
Data Form
Microsoft SQL Server
Microsoft FoxPro
Microsoft Visual FoxPro
Paper filing cabinet
Documentation Available for this Data Collection Method / System
Administrative manual and/or data product instructions
List of all data elements
Data dictionary containing at least the data element format and definitions
Procedures for verifying data accuracy

(a) 9,437 schools include California Youth Authority, county community, community day, continuation, juvenile halls, alternative, opportunity, special education, and state special schools. The number of schools fluctuates.

4.1.2.5 California School Information Services (CSIS)

Exhibit 4-7, on the following two pages, summarizes the role of CSIS as an alternate data collection mechanism for CBEDS data needed to meet CDE's data collection and reporting requirements for NCLB Title I, Part A, and Title II. CSIS also creates unique student identifiers.

4.1.2.5.1 Failures of the Current System to Meet the Objectives and Functional Requirements of an Acceptable Response to the Problem or Opportunity

Participation by LEAs in CSIS is voluntary. CSIS currently collects data from approximately 200 of the approximately 1,100 LEAs. Currently, CSIS does not collect all data elements required to meet NCLB reporting requirements or maintain data longitudinally.

CSIS will assign unique student identifiers to all public school students by April 2005. To do that, CSIS will collect specified data on each student (legal name, gender, birth date, primary language, and ethnicity). To maintain the integrity of the CSIS "locator" database, CSIS also will collect basic enrollment data.

4.1.2.6 California English Language Development Test (CELDT)

Exhibit 4-8, following Exhibit 4-7, summarizes the role of CELDT in CDE's student performance assessment program for English language development.

4.1.2.6.1 Failures of the Current System to Meet the Objectives and Functional Requirements of an Acceptable Response to the Problem or Opportunity

The current process of collecting student-level demographic and program participation data, together with assessment data, via CELDT poses several challenges for both the LEAs and CDE, many of which are similar to those described in sections 4.1.2.1.1 and 4.1.2.2.1 above, for STAR and CAHSEE. Furthermore, the demographic and program participation data collected on the CELDT is the same as the data collected on the STAR and CAHSEE test forms.

At the present time, the CDE has no capability to collect and store student-level CELDT assessment data longitudinally. Prior year test scores are self-reported by the LEAs and there is no audit process to assure the quality of these data. Consequently, the CDE is unable to meet the legislative mandates of NCLB Title III Part A, SB 1453, and SB 257 for CELDT assessment data.

Exhibit 4-7 CSIS Program Summary

CDE Data Collection Method / System
California School Information Services (CSIS) – State Reporting
Description
CSIS is an organization offering an alternative mechanism for collecting CBEDS and language census data and is currently used by approximately 200 LEAs. CSIS provides a vehicle for collecting data extracted from the student information systems (SIS) in each participating LEA. The CSIS mission is to plan, test, implement, and administer an electronic statewide school information system that will accomplish two primary data transfer functions: the transfer of student records between districts; and the submission of LEA-level data to CDE. Encrypted data transfer occurs via scheduled student-level data extracts from the SIS in the LEAs to CSIS. CSIS then consolidates collected data into CDE reports and submits it electronically to the CDE.
Data Subjects Reported
Students: approximately 1.8 million
Data Collected
Attendance / Enrollment Staffing data Student demographic (including unique student identifier) Professional Staff Assignment Other (classified staff, high school graduation requirements, etc.)
Information Security, Privacy, and Confidentiality
To participate in CSIS program, CSIS must assign a non-personally identifiable unique identifier to every LEA student. To create and maintain unique student identifiers, CSIS must maintain basic demographic information on each student. To ensure information security, CSIS has implemented a security scheme based on the following security capabilities: HTTPS; 128-bit SSL encryption; and public key infrastructure (PKI) X.509 digital certificates. The CSIS security scheme requires mutual authentication at both the client and the server to ensure secure, Internet-based data transfer.
Collection Frequency
Annually
Key Dates
CBEDS (CDIF, SIF, PAIF): Census date: October 1; Due date: October 27; Public date: June 1 and 15; Report date: June 1 **CBEDS Language Census (R30-LC):** Spring Submission
Primary Use
Meet requirement of program areas

(continued on next page)

Exhibit 4-7 CSIS Program Summary *(continued)*

State / Federal Programs Supported
NCLB
Statewide Student Identifiers (Education Code (E.C.) Section 60900[e][3])
Data Users
CDE:
Assessment and Accountability Branch: Data Management Division, Policy & Evaluation Division, and School & District Accountability Division
Finance, Technology & and Administration Branch: Technology Services Division
School districts
Researchers
Public
Vendors
Dissemination Method(s)
Encrypted data transfer
Aggregated data products
Data Form
Microsoft SQL Server
Documentation Available for this Data Collection Method / System
Administrative manual and / or user instructions on the data product
List of all data elements
Data dictionary containing at least the data element format and definitions
Procedures for verifying data accuracy
Procedures for changing data element structure

Exhibit 4-8 CELDT Program Summary

CDE Data Collection Method / System
California English Language Development Test (CELDT)
Description
State law (Education Code sections 313, 60810, and 60812) requires development of a state test that school districts must give to students whose home language is not English. This test is named the California English Language Development Test (CELDT). Federal law, the No Child Left Behind Act of 2001, Title III, requires an annual English language proficiency assessment. A school must have an English language proficiency assessment result on record within 30 calendar days from when a student whose home language is not English first enrolls in a California public school, or they must administer the CELDT. Students whose home language is not English, who were not initial fluent English proficient (IFEP), and who have not been reclassified as fluent English proficient (FEP) must take the CELDT annually until they are reclassified.
Data Subjects Reported
Students: 1,790,000
Data Collected
Language proficiency Student demographic Education agency Mobility Special education
Information Security, Privacy, and Confidentiality
Student-level demographic, program participation, and assessment data delivered from the test vendors to CDE do not include personally identifiable information. Student performance data disaggregated by demographic and program participation data elements are displayed on CDE's DataQuest website. This site is accessible by the public. However, student performance data are not displayed where disaggregating includes 3 or fewer students.
Collection Frequency
Semi-annually
Key Dates
Due date: December and February Public date: February and November

(continued on next page)

Exhibit 4-8 CELDT Program Summary *(continued)*

Primary Use
Monitoring and evaluation
Reporting to the federal government
Reporting to the public
Names of State / Federal Programs Supported
NCLB: Title III: Part A: English Language Acquisition, Language Enhancement, and Academic Achievement Act
Data Users
CDE:
Assessment and Accountability Branch: Language Policy & Leadership Office, Policy & Evaluation Division and, School & District Accountability Division (Assessment and Accountability Branch)
Legal Division; Office of Deputy Superintendent; Standards and Assessment Division
Legislative Analyst's Office
Researchers
Media
Public
Dissemination Method(s)
Hardcopy reports
Static HTML reports
Web-based dynamic reports
Downloadable data files
Data Form
SAS
Microsoft SQL Server
Fixed length or delimited text file
Documentation Available for this Data Collection Method / System
List of all data elements
Data dictionary containing at least the data element format and definitions
Procedures for verifying data accuracy
Stored data location

State law requires that districts administer the CELDT to a new student whose home language is not English within 30 days after they first enroll in a public school if there is no record of English language proficiency assessment results. Often times, a school unnecessarily administers the test because it is unaware that the student already took the test at another school. Also, school and LEA resources are consumed unnecessarily attempting to get the correct score for the student on last year's test. The prior and current test scores are required to meet NCLB reporting.

4.2 Technical Environment

The LEAs operate and maintain a variety of education administration information systems to support operational, financial, human resources, and student information management needs. Many of these systems are commercial, off-the-shelf (COTS) solutions, while others are custom-developed systems, either developed internally by LEA staff or by systems integrators.

The need for vertical reporting among the LEA, state, and federal levels brought about by NCLB is providing a needed catalyst for the development of standard data interchange specifications and protocols. The Schools Interoperability Framework (SIF) holds promise for facilitating the integration of information systems at all levels to meet the demands of NCLB.

The CDE's current IT environment, which is based on open systems and *defacto* standards, is capable of supporting SIF. CDE's current IT environment is described below in section 4.2.2.

4.2.1 Assumptions and Constraints Affecting the Opportunity

Several assumptions and constraints affect the successful outcome of the proposed solution, including the following:

- ❑ Expected operational life of proposed system
- ❑ Interaction of proposed system with other systems, agency programs, and organizations
- ❑ State-level information processing policies
- ❑ Financial constraints
- ❑ Legal and public policy constraints
- ❑ Agency policies and procedures related to information management
- ❑ Anticipated changes to equipment, software, or operating environment
- ❑ Availability of personnel resources for development, maintenance, and operation of the proposed solution.

These issues are discussed in more detail in Sections 4.2.1.1 through 4.2.1.8, below.

4.2.1.1 Expected Operational Life of Proposed Solution

Assuming essential functional and technical enhancements or upgrades are sustained, the operational life of the proposed solution is 20 years. The proposed solution will support the incremental addition of longitudinal student-level data over the next 20 years.

4.2.1.2 Interaction of Proposed Solution with Other Systems, Agency Programs, and Organizations

CALPADS will obtain student and teacher-level data required for NCLB reporting from education administration information systems in the LEAs that meet the standards and protocols developed for data interchange with CALPADS. CALPADS will provide for the generation of NCLB reports to meet federal requirements, as well as LEA access to pre-defined queries, reports, and data files..

The system must be flexible enough to efficiently meet new demands placed on it by future legislation and regulations. The federal government could change accountability reporting requirements, which could require CALPADS to collect and maintain additional data elements not identified today. For example, the CDE fully expects that in December of this year, the federal government will adopt a new subgroup for AYP reporting: limited English students receiving services under Title III. CALPADS must be able to evolve rapidly in order to meet the challenge of changing legislation.

CALPADS will function as the database-of-record for the Policy and Evaluation Division (PED), which calculates API and AYP for every public school in California. PED currently stores five years of school-level assessment results, which it uses to monitor program improvement for Title I schools. In the future, PED will use student-level assessment results stored longitudinally in the CALPADS database for this purpose. In addition, the longitudinal storage of student-level assessment results in CALPADS will enable both the Assessment Office and the Language Policy and Leadership Office to more readily monitor the rate of language acquisition for English learners at the student and school levels. Finally, the storage of assignment data for certificated personnel in CALPADS will enable the Professional Development and Curriculum Support Division to monitor school and district-level progress in preparing, training, and recruiting high quality teachers and principals.

4.2.1.3 State-Level Information Processing Policies

This project conforms to state-level information processing policies.

4.2.1.4 Financial Constraints

The CALPADS project is subject to adequate funds being provided in the annual Budget Act to support staff and project implementation and on-going maintenance.

4.2.1.5 Legal and Public Policy Constraints

Legal and public policy constraints that require due consideration for this project revolve primarily around the Family Educational Rights and Privacy Act, the Freedom of Information Act, the California Public Records Act, the Information Practices Act of 1977, and the State Records Management Act. The requirements imposed by these laws are being duly considered in the course of the CALPADS project and will be reflected in the design and implementation of CALPADS.

4.2.1.6 Agency Policies and Procedures Related to Information Management

This project is consistent with CDE information management policies and procedures and is consistent with CDE IT standards.

4.2.1.7 Anticipated Changes in Equipment, Software, or Operating Environment

CALAPDS is a new information system that will provide new functionality (collecting and reporting longitudinal student-level achievement data) for the CDE. Based on advice from the Department of Finance, the CDE will focus CALPADS to collect only those elements required to meet NCLB reporting requirements. Consequently, the CDE proposes in this FSR that CALPADS not entirely replace any of the CDE's existing data collections. CALPADS, however, will significantly reduce data collections within CBEDS and ConApp. The CDE is evaluating how CBEDS may be further streamlined, and whether other CDE collections may be reduced or eliminated by collecting additional data elements in CALPADS.

The CDE will implement CALPADS using CDE information technology standards for hardware and software.

4.2.1.8 Availability of Personnel Resources for Development, Maintenance, and Operation of the Proposed Solution

The CALPADS project will be managed and implemented by a team of CDE and contracted personnel. Personnel resources required for the ongoing maintenance and operation of CALPADS are identified in Sections 6 (Project Management Plan) and 8 (Economic Analysis Worksheets) of this feasibility study report. In general, the CDE lacks sufficient staff with the technical expertise required to maintain a project such as CALPADS. The CDE intends to outsource the operation and maintenance of CALPADS.

The CDE will comply with Section 4982.1 of the State Administrative Manual. This sections requires that

> *"The Stephen P. Teale Data Center (Teale) shall serve all other [*non-Health and Human Services Agency] *agencies in the state whose application needs require the services provided by a consolidated data center."*

CALPADS requires a data center to host a number of development and production Web, application, and database servers. The CDE intends to outsource the hosting of CALPADS to Teale.

4.2.2 Existing Infrastructure

The sections that follow describe CDE's current information technology environment.

4.2.2.1 Existing Network Infrastructure

The CDE's Technology Services Division (TSD) operates a Novell Netware-based Ethernet wide area network (WAN) that serves approximately 1,200 internal users in several geographic locations throughout the State.

The CDE's network topology aligns itself with the Cisco layered model, a highly regarded approach in the industry. Key components of the CDE's network architecture include the following:

- Dynamic host configuration protocol (DHCP) – for dynamically assigning Internet protocol (IP) addresses to client stations logging onto a TCP/IP network
- Segmented network – to reduce excessive broadcast traffic, which is a common cause of bandwidth congestion
- Category 5e (Cat 5e) cable – the physical media used to connect users to the network
- Fiber optic links – for interconnecting the Cisco network layers
- 100 BaseT local area network infrastructure – allows 100 Mbps switched data transfer over the local area network
- Three T-1 connections to Teale Data Center (TDC) – One T-1 connection is dedicated to the CDE's Principal Apportionment System Re-Write (PASR) project; a second T-1 connection primarily supports 3270 emulation and connection to CSGNET; the third T-1 connection is for failover
- T-1 data circuits and gigabit connections – used to interconnect the offices in the nine geographic locations that comprise the CDE wide area network
- DS-3 connection – used to establish Internet connectivity; the DS3 connection has a bandwidth of up to 40 Mbps
- Digital California DS-3 connection – an additional Internet connection provided by CENIC; the DS3 connection provides bandwidth of up to 40 Mbps
- Novell Netware 6.0 – the predominant network operating system (NOS) within the CDE.

4.2.2.2 Existing Internet Infrastructure

The CDE's Internet presence is substantial and includes about 7,000 core informational web pages and multiple critical web-based applications. Read-only Internet content is provided via static active server page (ASP) technology using a newly designed web content management system (CMS). The CMS is database driven dynamically down to the third level of web page information. Dynamic web application data collection activity derived from on-line applications (e.g., interim data collection system, CalWORKs data collection system, etc.) are delivered via dynamic Microsoft ASP. The CDE has numerous primary and several miscellaneous web servers. All web servers are located at the CDE's headquarters in Sacramento and are managed by TSD.

4.2.2.2.1 Web Page Standards

The CDE has a newly designed web site, which utilizes a fully functional content management system. The system includes dynamic pre-defined templates, cascading style sheets, pre-defined fonts/colors/tables, specific naming conventions, required metadata and keywords for search ability. All content must be reviewed and approved before it can be posted to a primary web server. All web material must be fully accessible, as required by Section 508 of the Federal Rehabilitation Act, and must meet W3C[7] validity checks.

4.2.2.2.2 Internet Connectivity

The CDE contracts with SBC Communications Inc. for a single DS3 Internet connection capable of up to 40 Mbps of data bandwidth adjustable in 5 Mbps increments. The CDE adjusts the bandwidth throughput based on Department needs. During normal conditions, the CDE utilizes approximately 15 Mbps capacity, but increases throughput to 40 Mbps in August of each year to support increased traffic resulting from STAR system data.

Furthermore, the CDE has a direct-connect data circuit into the CENIC Digital California network. CENIC maintains this DS-3 SBC-owned data circuit. The CDE uses this Internet connection for fail over purposes and during high traffic activity for the release of STAR and other high bandwidth utilization periods.

4.2.2.3 CDE Technology Standards

The TSD revised office automation standards for the Department in 1997. The objective of adopting these standards is to provide the Department with information technology tools to enhance staff productivity and ability to communicate in an efficient and cost-effective manner. Adoption of common software standards and acquisition of new personal computers make it

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[7] World Wide Web Consortium, an international industry consortium founded in 1994 to develop common standards for the World Wide Web.

much easier for department staff to share information. The hardware and software standards are presented in the subsections that follow.

4.2.2.3.1 Desktop Standards

The standard desktop personal computer at the CDE is a Pentium processor-based machine capable of running Windows 2000 or higher. The CDE has also established the following hardware configuration standard purchase model (subject to change):

- Pentium IV, 2.6 GHz
- 512 MB DDR SDRAM
- 80 GB hard drive, NT file system
- Read/Write CD-ROM
- 17-inch color monitor.

The CDE also has defined the following office automation standards for minimum software to be contained on each personal computer:

- Microsoft Windows 95/2000
- Microsoft Office 97/2000 Professional
- Microsoft Internet Explorer 6
- Novell GroupWise 6.0
- Novell InterNetWare
- Norton's Anti-Virus.

4.2.2.3.2 Server Standards

The CDE standard for file / print and application servers is as follows:

- HP-Compaq ProLiant DL380 G3 with dual 2.8 GHz processors and 512 KB cache memory
- Microsoft Windows 2000 or Windows 2003 operating system
- Novell Netware network operating system
- Rack-mountable, blade-type server form factor
- A minimum of 2 GB RAM
- Integrated smart array 5i disk controller
- Six 36 / 72 GB pluggable Ultra-SCSI hard drives
- Dual 100 MBPS network interface cards

- Redundant power supplies
- Redundant cooling fans.

The CDE standard for database servers is as follows:

- HP-Compaq ProLiant DL380 G3 with dual 2.8 GHz processors and 512 KB cache memory
- Windows 2000 or 2003 operating system
- Microsoft SQL Server
- Rack-mountable, blade-type server form factor
- A minimum of 2 GB RAM
- Integrated smart array 5i disk controller
- Four 18.2 GB internal hard drives
- Eight 36 / 72 GB pluggable Ultra-3 hard drives (4 per drive array)
- Two smart array controllers (5302 / 64)
- Two StorageWorks enclosures (4354R)
- Dual 100 MBPS network interface cards
- Redundant power supplies
- Redundant cooling fans.

4.2.2.3.3 Web-Based Software Development Standards

The CDE established web-based software development policies, presented below. These policies apply to systems that are located on the CDE's web servers.

- The system must use Microsoft Active Server Pages (ASP) technology in a Microsoft Windows 2000 Server environment
- The system must use VBScript programming language for server-side business logic
- The system will not utilize pre-compiled custom-built ASP components developed by non-CDE staff or external vendors (i.e. components for which TSD does not own or have in its possession the pre-compiled source code)
- Microsoft SQL Server 2000 is the preferred backend database. Microsoft Access 97/2000 can be used under the following circumstances:
  - The database is used for read-only purposes
  - The number of concurrent accesses is anticipated to be low

- Client-side (i.e., web browser) logic must be developed using the JavaScript programming language
- Web pages must be viewable with a minimum of Netscape 4.0 and Microsoft Internet Explorer 4.0 (PC and Macintosh versions)
- Web pages must conform to the CDE Web Standards for accessibility and hypertext markup language (HTML).

4.2.2.3.4 Application Development/Database Management Software

Within the CDE, staff utilize standard tools to develop all new business applications. The toolset used is primarily determined by the nature and business needs of the application and associated database being developed.

There are two kinds of databases: tactical and strategic.

- Tactical databases are developed for a single function and used within a specific work group where there is little or no need to share the data with any business entities outside of the owning work group. Standard software provided and used to develop tactical systems is Microsoft's Access 2000 and Visual Basic for Access.
- Strategic databases have multiple functions and are shared by multiple work groups whose contents are important to the CDE as a whole. The standard software used to develop strategic systems is Microsoft SQL Server 2000 relational database management software, Microsoft's Visual Basic, and ASP.

For both tactical and strategic systems, the standard ad hoc reporting tools include Microsoft Access and Crystal Reports. For all new development projects, CDE staff use a standard development lifecycle methodology. CDE staff use a variety of tools during the lifecycle, including:

- Microsoft's Project Manager for project planning and schedule development and monitoring
- Microsoft Visio for business process flows, data flow diagrams, and data relationship diagramming
- Log Explorer and ERWin for database design and maintenance
- SourceSafe for source code management
- Other standard office automation tools including Microsoft Word, PowerPoint, Excel, and Access for other system development and/or documentation purposes.

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5 Proposed Solution

To evaluate proposed solutions for the retention and analysis of longitudinal pupil achievement data on statewide assessments, the California Department of Education (CDE) contracted with a vendor to conduct a feasibility study and document their findings in accordance with the Department of Finance's (DOF) Statewide Information Management Manual (SIMM) Feasibility Study Report Preparation Instructions section. As directed by SB 1453, the CDE also reviewed existing state rules and regulations governing information technology projects. Based on these analyses, the evaluation of the alternative solutions, and the anticipated competitive procurement process, the CDE believes that it will be most effective and in the best interest of the State for the State to own the California Longitudinal Pupil Achievement Data System. As described in Section 5.1.6 Procurement Approach and in the Information Technology Procurement Plan (ITPP), the CALPADS solution will be procured following the Department of General Services (DGS) traditional procurement process and therefore, the system will be owned by the State of California.

The CDE also believes that it will be most effective if the CDE houses CALPADS at the Stephen P. Teale Data Center (Teale). The CDE does not have compelling business requirements to seek an exemption from the State Administrative Manual requirement that all non-mainframe systems[1] be sited at one of the state's major data centers. State Administrative Manual Section 4982.1 specifies that Teale is the state data center that shall serve the CDE.

Housing CALPADS at Teale is also consistent with a recommendation from the recently released California Performance Review (CPR). In Chapter 7, Statewide Operations, SO12 (Consolidate State Data Centers, Servers and Storage) the CPR recommends:

> *"The Governor should direct the Teale Data Center and the Health and Human Services Agency Data Center to immediately begin expanding their server hosting and management services and aggressively market them to state government agencies and departments. The Governor should direct the Department of Finance, or its successor, to support this effort."*

This section describes the solution proposed to meet the business objectives and requirements defined in Section 3. The proposed solution is presented in the following sections:

5.1. Solution Description

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[1] Except those used for local area networks and office automation functions.

5.2. Rationale for Selection

5.3. Other Alternatives Considered.

5.1 Solution Description

The California Department of Education (CDE) conducted an informal market review to determine technology solution options available for collecting, managing, and reporting longitudinal student achievement data to meet No Child Left Behind (NCLB) requirements. The CDE contacted twelve other states purported to have longitudinal student achievement data systems, and received responses from four. In addition, the CDE conducted an on-site interview and technical system review with two local education agencies, the California School Information System (CSIS), and the Los Angeles Unified School District (LAUSD). The survey results presented in this FSR represent the responses to a second round survey effort. During the first survey, the CDE received a total of six responses. Since these responses were based on a different survey format, the responses are not included in this FSR. However, based on the information provided in the previous survey effort, none of the respondents' environments would have been a suitable candidate alternative. The CDE also researched a number of product and service offerings of vendors that specialize in implementing and/or outsourcing data management and analysis solutions for collecting, managing, and reporting longitudinal student achievement data. Specifically, the CDE:

Identified several entities that could potentially provide an outsourced or Application Service Provider (ASP) based solution where CALPADS would be hosted by the ASP in a shared application environment. Under this approach, the LEAs would submit all required student-level and teacher-level data to the ASP hosting entity and access the ASP's shared application environment to manage and report their longitudinal student achievement data.

Identified six major players in the K-12 education data management and analysis market space that have extensive background in longitudinal student achievement data systems and are sufficiently established to serve as the primary systems integrator for the CALPADS project. In addition to these major firms, the CDE identified approximately two-dozen potentially viable vendors within the K-12 education and data management and analysis market space that provide specialized software integration services or products to perform data collection; extract, transformation, and load; data analysis; and reporting functions. Many of these firms, especially the niche players, specialize in delivering their products and services to small and medium-sized local education agencies, not large state departments of education.

Did not identify a single comprehensive commercial off-the-shelf (COTS) data management and analysis product capable of meeting the CALPADS requirements. However, as described above, the CDE identified a number of individual COTS products that provide varying levels of functionality to support the collection, management, and reporting of longitudinal student achievement data.

Based on the research and analysis performed, CDE was unable to identify a feasible outsourcing option or single comprehensive COTS solution suitable for collecting and managing longitudinal student achievement data, and NCLB vertical reporting for the large number of public school students and LEAs in California. Likewise, the CDE's search for a data management and analysis solution in the public domain did not yield satisfactory results. Therefore, it will be necessary for the CDE to procure and implement an integrated data management and analysis solution for collecting, managing, and reporting longitudinal student achievement data. The risk and cost associated with implementing an integrated CALPADS solution will likely be minimized by the existence of a number of system integration vendors and product and service vendors offering proven data management and analysis capabilities, many of whom have specialized expertise in K-12 education. Descriptions of the alternatives considered during this analysis are presented in Section 5.3 Other Alternatives Considered.

Exhibits 5-1 through **5-3**, starting on page 5-4, illustrate the high-level proposed solution architecture for CALPADS.

Exhibit 5-1 presents the proposed CALPADS data collection and reporting process. The proposed CALPADS process places local education agencies (LEAs) in the primary role of providing student-level demographic and program participation data to the CDE and the test vendors in the primary role of providing student-level test results to the CDE.

As presented earlier in Exhibit 4-2 (section 4 of this feasibility study report), the current test vendors are pivotal to collecting all student-level assessment data, both the student demographic data and test results needed for NCLB reporting. The proposed solution differs by collecting the student, teacher, and institutional data directly from LEAs. LEAs will submit new and updated student-level records through out the year, as needed, to maintain the accuracy of CALPADS data. CALPADS will be the database of record for all LEAs. A pre-ID process similar to the current pre-ID process will be established under the proposed solution. When required by the test vendor to prepare the LEA's answer documents, the LEA will submit their student data via CALPADS (a LEA initiated submission) as their pre-ID data.

Because the current test vendor data collection will not be the source for student demographic and program participation data, the number of data elements CALPADS must send to the test vendor will be reduced from what is sent to the test vendor via the current pre-ID process. However, the test vendor will continue to capture the 'day of test' filled-in answer documents and submit that information, along with assessment results, to CALPADS. Any 'post

test' data changes performed by LEAs will be reflected on the students' records in CALPADS without requiring the involvement of the test vendor. The proposed approach greatly reduces the reliance on the test vendors as the primary data collection and correction mechanism for statewide student demographic and program participation information. The CDE believes this change should yield a State and LEA cost reduction associated with the additional test vendor "services" to enable the collection and correction of student demographic data.

The "longitudinal" database requires a unique statewide student identifier to match records of individual students from one test administration to the next as the student progresses through California public schools. This data element also helps meet two NCLB requirements: to keep track of continuous enrollment at the same school and district between fall and spring, and to monitor which students are absent or exempt from testing. California School Information Services (CSIS) currently assigns and maintains the unique student ID for public school students. The proposed solution described in this section assumes that CSIS will continue to assign and maintain the unique student identifier for all public school students, and that CALPADS will use this unique ID and other LEA provided data as necessary to match student achievement data.

Exhibit 5-1 Proposed CALPADS Data Collection and Reporting Process

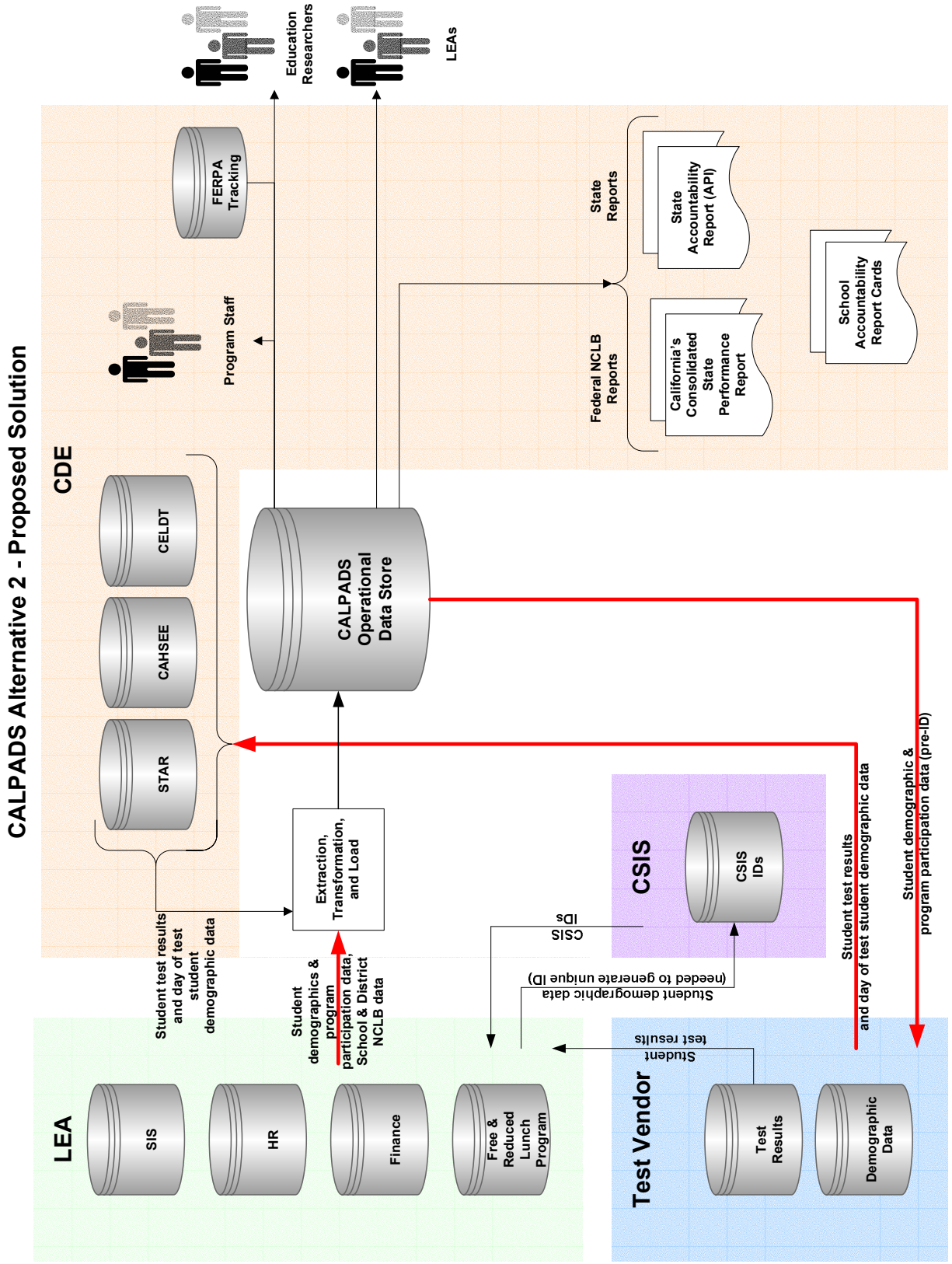


Exhibit 5-2 Proposed CALPADS Solution Architecture – Technology Layer

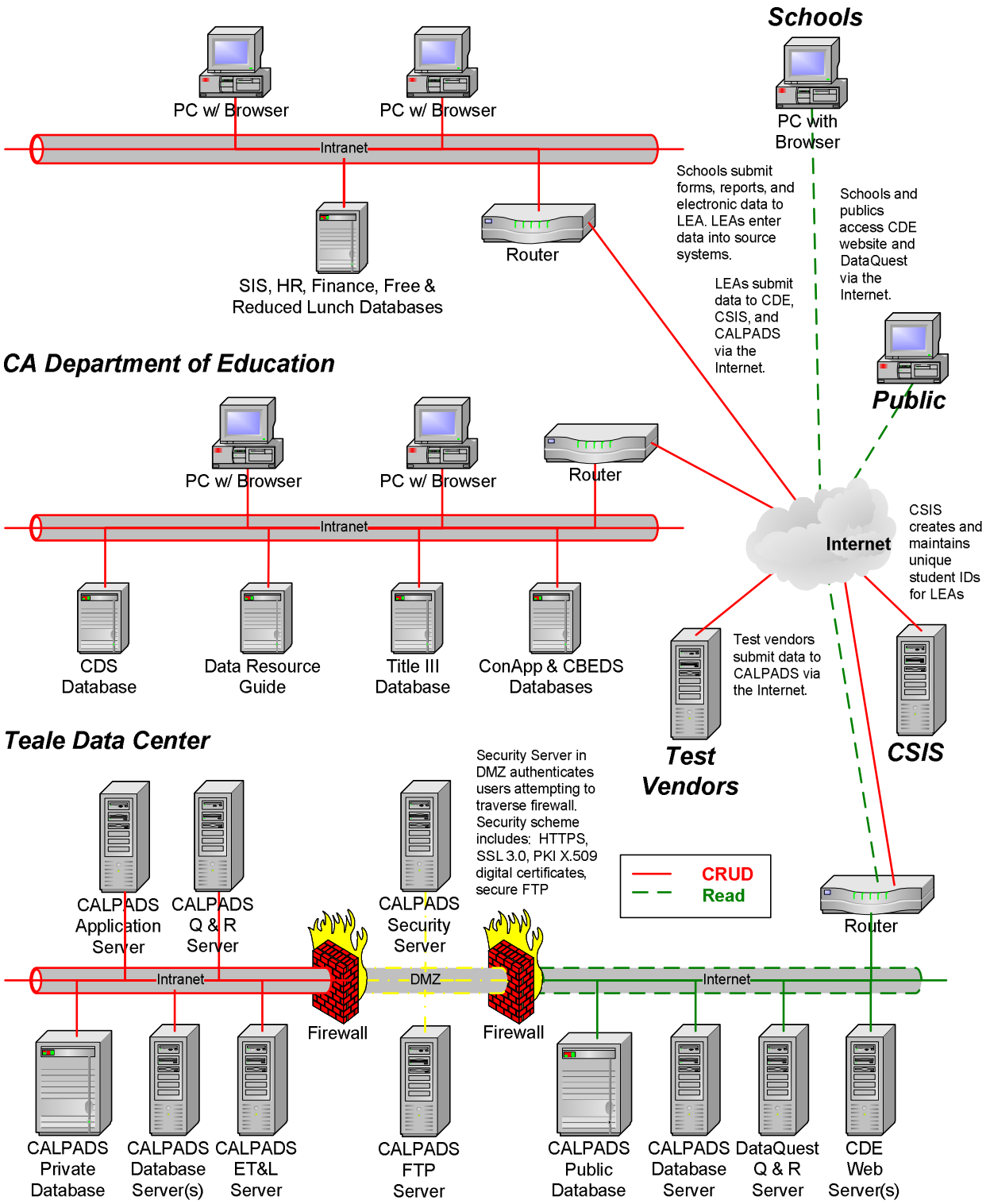
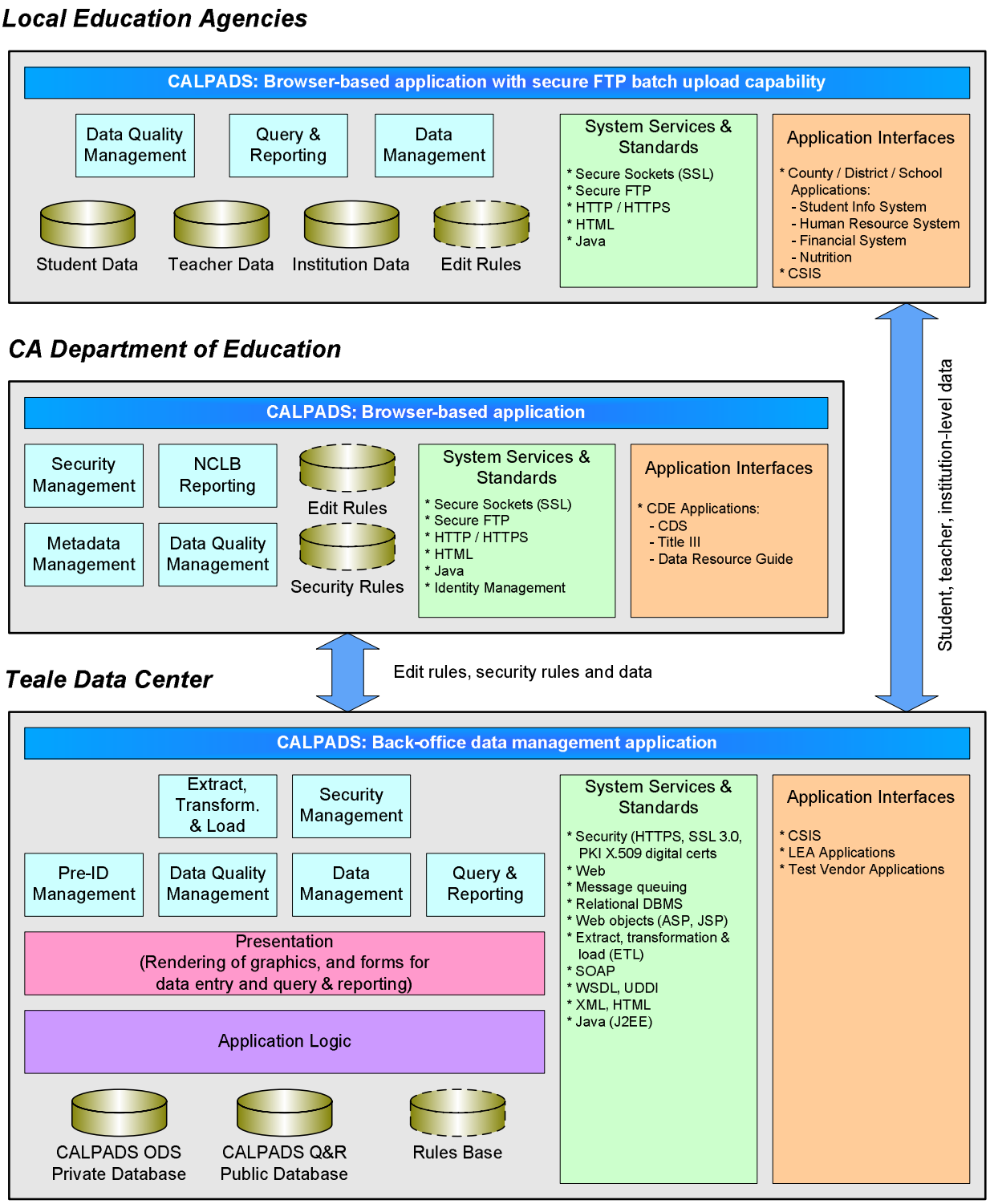


Exhibit 5-3 Proposed CALPADS Solution Architecture – Application Layer



CALPADS will provide LEAs with three options for submitting student, teacher, and institution-level data for NCLB reporting:

- Online data entry via a dedicated, Web-based portal hosted by the CDE
- Batch submission of data in the form of standardized flat files via secure file transfer protocol (FTP) or secure hypertext transport protocol (HTTPs), per data interchange specifications developed by the CDE
- Batch submission of data in the form of Schools Interoperability Framework (SIF) compliant, extensible markup language (XML) data streams via secure FTP or HTTPS.

The first option is intended for small LEAs (typically independent charter schools and small districts with fewer than 300 students) that do not have automated education administration systems. The second option is intended for districts that have automated education administration systems capable of producing extract files for submission to the CDE. The third option also is for LEAs capable of producing extract files. However, this option enables these LEAs with SIF compliant systems to utilize these capabilities.

As presented in Exhibits 5-2 and 5-3, CALPADS will host a single, integrated, statewide operational data store that complies with Internet-based standards for interoperability, communications, data interchange, and information security. This operational data store will store student, teacher, and institution-level data required for NCLB reporting and will store student-level achievement data in a longitudinal manner. The primary objective of CALPADS is to store longitudinal student-level achievement data and enable the reporting and extracting of analyzable files to authorized users. As defined in SB 1453, the CALPADS environment is not a data warehouse implementation or a decision support system. However, CALPADS data repository, as proposed in this FSR, may serve as source data for a data warehouse or decision support system, should one be developed. CALPADS also will enable secure access via the CDE's Internet portal to summarized non-personally identifiable student achievement data.

CALPADS will provide the data necessary to generate required NCLB reports and provide the CDE with a single, centralized database-of-record for K-12 longitudinal student achievement data for all students served by public schools in California. This will enable the CDE to meet legislative mandates of Senate Bills 1453 (SB 1453) and 257 (SB 257), provide data required to help determine the efficacy of the state's investments in education, and streamline or reduce the number of existing data collections.

Under this solution, CALPADS will become the database-of-record, introducing a fundamental change in the existing business process for NCLB data collection and reporting. This new business process revolves around LEAs updating CALPADS student-level demographic and program participation throughout the academic year, as the LEAs deem necessary. This will enable LEAs to cleanse their data before assessment testing, not only after

testing, as is the case now. The proposed process change to on-going submission and review of new and updated LEA data to the CALPADS database will improve the data integrity and accuracy of state and federal reporting.

Additional information concerning the proposed solution is contained in the subsections that follow.

5.1.1 Hardware

CALPADS will reside on a suite of servers similar to servers currently in production at the CDE. Hardware needed for this project will include standard server platforms, routers, switches, and client personal computers (PCs). The CDE presented a conceptual view of CALPADS hardware earlier in Exhibit 5-2.

5.1.2 Software

The CDE has established interoperability standards, open communications and messaging protocols, standards-based system services, and data interchange specifications needed to accommodate its business requirements for data management and analysis in support of NCLB reporting requirements. The CDE software standards, presented in Section 4 of this FSR, are widely used in both the public and private sectors. The CDE also presented a conceptual solution earlier in Exhibits 5-1, 5-2, and 5-3.

The CDE will seek a solution utilizing the standards and conceptual solution noted in the prior paragraph, which are widely used in both the public and private sectors. In addition, the CDE will consider as mandatory, a solution that embraces SIF and complies with the latest version of the SIF data object architecture, or an equivalent alternative. This will position the CDE to make CALPADS fully compliant with SIF in the future, which will further streamline the vertical reporting of NCLB and other data across education agencies at all levels.

5.1.3 Technical Platform

The CDE intends to specify the use of hardware and software that comply with CDE Technology Services Division (TSD) standards, which are widely supported in the marketplace. Because LEAs vary significantly in technical sophistication and availability of technical staff resources, the CDE will give preference to solutions that place a minimal support burden on LEAs.

5.1.4 Development Approach

The CDE in collaboration with CSIS will partner with the selected systems integrator in the design, development, business process change, data cleansing and migration, testing, and training aspects of the CALPADS implementation. In addition, CDE will engage representatives from LEAs staff to provide subject matter expertise in the design, development, and testing of the CALPADS solution. Initially, the systems integrator will be responsible for providing a

detailed work breakdown structure (WBS) and schedule for each phase of the project. The project and systems development lifecycles must be adhered to when developing the project management and technical project plans. Work on the project will not begin until the CDE obtains DGS approvals of the final contract.

The CDE and CSIS staff will participate at each stage in the project, but will not be responsible for the day-to-day development and implementation effort. The CDE already has engaged the services of a CALPADS project manager through a competitive bidding process. This CALPADS project manager will work alongside key CDE management personnel to drive the successful implementation of CALPADS. The project team is described in Section 6 of this feasibility study report (FSR).

5.1.5 Integration Issues

Today, the majority of LEAs utilize the Visual FoxPro-based data entry applications (or their underlying data structures) developed and maintained by the CDE to submit data for the California Basic Education Data System (CBEDS), Language Census (Form R30-LC), and Consolidated Application for Funding Categorical Aid Programs (Part I) (ConApp) data collections. Approximately 200 LEAs utilize CSIS to submit these data for the CBEDS and language census data collections. The vast majority of LEAs use either the CSIS data interchange specifications or the data interchange specifications for the CBEDS and ConApp Visual FoxPro-based data entry applications to submit data to the CDE. As a result, these specifications constitute an appropriate point of departure for defining the data interchange specifications required by CALPADS.

The SIF is gaining momentum as an industry standard among state and local education agencies, and education technology vendors, especially now that the United States Department of Education (USDE) has joined SIF. The USDE is actively working together with other SIF members to further develop the framework and encourage its use to meet NCLB reporting requirements. Recently, the California Department of Education joined as a member of the SIF organization.

The CDE already has a secure FTP site that LEAs use to upload data for submission to the CDE. Because LEAs are familiar with this process, CALPADS will likely implement a similar mechanism for LEAs to use to upload student, teacher, and institution-level data to the CDE in a secure manner. This mechanism will allow LEAs to upload CALPADS data either in the form of flat files or XML data streams that conform to the latest SIF data object specifications. By offering LEAs the choice to submit data in either format, LEAs can choose to make relatively minor modifications to their existing data extraction processes and submit their data as flat files, or move toward SIF compliance and submit their data as XML data streams.

5.1.6 Procurement Approach

The CDE anticipates the formal state competitive procurement effort to increase the likelihood that an integrated solution can be developed and implemented by a system integrator utilizing existing data management and analysis software products and/or public domain systems capabilities. Based on the research and analysis performed as part of this FSR, the CDE believes a system integrator can define and propose a complete end-to-end solution by integrating the available COTS products and/or existing public domain solution to meet the CALPADS requirements. In order to potentially leverage the investment that State has made, the CDE will request that all bidders submitting proposals in response to the CALPADS RFP to assess the viability of leveraging the CSIS State Reporting and Records Transfer System (SRRTS) within their proposed solution. This assessment request is subject to DGS approval of the ITPP. The CDE plans to follow the state's traditional competitive procurement process and develop a formal Request for Proposal (RFP) for an integrated solution. The CDE will distribute the RFP to members of each of the following classes of potential vendors: systems integrators; vendors offering data modeling, and extract, transformation and load services and / or products; end user and business intelligence reporting products and / or services; and vendors providing data warehousing products and / or services. By proactively inviting a wide array of potential solution providers to participate, and perhaps partner, in developing a suitable integrated solution, the CDE believes the existence of proven data collection and/or reporting COTS products reduces the potential cost and risk of developing an integrated system from the ground up.

In its procurement effort, the CDE will not specify a technical solution, except to require that the solution be compatible with CDE Technology Services Division standards for interoperability, open communications and messaging, and system services and components.

The CDE has prepared an Information Technology Procurement Plan (ITPP) for submission to the Department of General Services (DGS) for the CALPADS project. The CDE will seek DGS approval of the CALPADS ITPP in parallel with Finance approval of the CALPADS FSR.

5.1.7 Technical Interfaces

CALPADS will require the following internal interfaces:

- Title III data (contains English learner student demographics and program support details)
- County/District/School (CDS) master data.

There are no significant technical, organizational, or political issues associated with the aforementioned internal interfaces, as the systems associated with these interfaces are source systems for CALPADS.

External source system interfaces required for CALPADS include:

- Student, teacher, and institution-level data from LEAs
- Unique student identifiers and associated data from CSIS. CALPADS also will provide selected student enrollment data to CSIS that allows CSIS to confirm the unique student identifier and maintain its "locator" file that allows districts to confirm a student's unique identifier.
- Student-level assessment data from test vendors.

There are no significant technical, organizational, or political issues associated with the aforementioned external interfaces, as the systems associated with these interfaces are source systems for CALPADS.

5.1.8 Testing Plan

The economic analysis worksheets (EAWs) in Section 8 include at least $1.6 million for testing. The systems integrator, in conjunction with the project manager and the rest of the CALPADS project team, will develop detailed test plans. Test scenarios developed by the CDE and participating LEA staff will be included in the test plan and used during extensive system testing.

The systems integrator will be responsible for unit testing and managing, tracking, and coordinating system, integration and user acceptance testing. The CDE and LEAs will collaborate with the systems integrator on system, integration, and acceptance testing prior to statewide rollout and during the scheduled rollout across LEAs.

A possible testing approach may involve the CDE selecting a representative sample of LEAs and requiring test vendors to participate in a pilot or field test for CALPADS. Under this possible approach, LEAs would submit pre-identification information to CALPADS, and test vendors would process demographic data needed to pre-slug answer documents and provide test results to CALPADS. The systems integrator would confirm that the CALPADS pilot met all test plan objectives and deliverables.

5.1.9 Resource Requirements

The CDE recognizes that CDE, LEA, and vendor resources are needed during all phases and stages of this project, including design, development, testing, implementation, and training. The CDE also recognizes that resources will be required to operate and maintain CALPADS. CDE resources include program and TSD staff. The CDE assumes that selected LEAs will be involved in various stages of system design and testing. To leverage existing knowledge of LEA data processes and interfaces, the CDE and CSIS will collaborate throughout the project. The CDE will require that the vendor provide training. The CDE also assumes that significant project management resources will be necessary to successfully implement CALPADS.

The human resources required for the CALPADS project, including assumed personnel positions, are described in the project management plan in Section 6 of the FSR. Resource

requirement assumptions made by CDE, including personnel years (PYs), and costs required to develop and maintain CALPADS, are presented in Section 8 of the FSR.

5.1.10 Training Plan

The project management plan in Section 6 and the EAWs in Section 8 include resources required to conduct end user training to LEA and CDE staff and conduct technical training to CDE technical and program staff. The CDE is not equipped to conduct LEA training statewide. However, CSIS already performs this role. Therefore, the CDE will work with CSIS to include training requirements in the RFP and will evaluate proposals in part based on the systems integrator's experience in managing end user training and developing related training and reference materials. The CDE will collaborate with CSIS and the systems integrator to develop a training plan for end user training, based on the CALPADS rollout schedule. The CDE anticipates that the systems integrator will work with CSIS to develop training and reference materials, and to conduct LEA training prior to placing CALPADS in production.

5.1.11 On-going Maintenance

CALPADS will be available online 16 hours per day, 7 days per week to accommodate extract, transform, and load (ETL) processing outside of normal business hours. In addition to ETL processing, the CDE will use the nightly batch window to perform backups and to replicate specific database changes in the operational data store (ODS) to the query version of the database for query and reporting purposes. An ODS is a database designed for queries on transactional data.

The CDE intends to site the CALPADS platform at the Teale Data Center (TEALE). The CDE also intends to require the systems integrator to provide optional ongoing maintenance services for the CALPADS application environment. Upon completion of the CALPADS implementation and warranty period, CDE will consider to either to exercise the maintenance option with the system integrator or to engage CSIS to maintain the CALPADS application environment. The project management plan in Section 6 and the EAWs in Section 8 include the CDE's assumptions and estimated personnel years and costs to perform ongoing system maintenance.

The CDE will contract for operations and maintenance of the CALPADS application. The CDE identified the types of vendor services required to support CALPADS, which include second and third level help desk support, system and application support, and database administration. This support will include second and third level help desk support, system and application support, and database administration.

The CDE will need one additional, full-time CDE position (1 PY) for on-going CALPADS support. This new position's responsibilities includes business rules updates, definition of new business requirements, liaison with the vendor and/or organization selected to operate and

maintain CALPADS, technical planning, program coordination, and administration. The CDE believes that a Staff Programmer Analyst – Specialist would be the appropriate classification for this new position.

In addition to resources required for system operations and maintenance, the CDE will provide 4.3 PYs of ongoing state staff support, as follows:

- Two full-time associate governmental program analysts to provide first level CALPADS help desk support and serve as liaison with the CDE's Technology Services Division.
- One full-time education programs consultant, one full-time office technician, and one-quarter PY of a staff counsel. These personnel will be responsible for qualifying researchers who request access to CALPADS, reviewing the purpose of each qualified researcher's request for CALPADS data, tracking each request in accordance with Federal Education Rights and Privacy Act (FERPA) and state privacy requirements, constructing the data set requested, and transmitting the data set to the researcher. These personnel also will review and disposition all California Public Records Act requests.

Ongoing maintenance of the CALPADS technical infrastructure (e.g., servers, network, etc.) will be performed by the Teale Data Center.

The CDE recognizes that LEAs must build capacity to transition to the CALPADS environment. To assist LEAs in this process, the CDE proposes that CSIS provide the one-time technical assistance required by LEAs to transition their current data submission processes to meet the data submission requirements for CALPADS. In addition to supporting the unique identifier process, CSIS also will provide on-going technical assistance to LEAs to support their data submission processes to the CDE and promote the use of CALPADS data for educational decision-making. These CSIS responsibilities are within the scope of CSIS enabling legislation (Education Code §49080), which states that CSIS is to:

> *"Build the capacity of local education agencies to implement and maintain comparable, effective, and efficient pupil information systems that will support their daily program needs, assist local education agencies in improving the outcomes of pupils, and promote the use of information for educational decisionmaking by schoolsite, district office, and county staff*." (§49080(a))
>
> *"Assist local education agencies to transmit state and federal reports electronically to the State Department of Education, thereby reducing the reporting burden of local education agency staff."* (§49080(c))

The CDE did not include within this FSR any costs associated with on-going CSIS technical assistance to LEAs to support their data submission processes to the CDE and promote the use of CALPADS, because the CDE assumes current CSIS operations funding will continue. Should any funding changes be considered, the proposed changes should be discussed by

CDE, CSIS, and DOF once the exact role of CSIS and its relation to CSIS' current activities is determined.

5.1.12 Information Security

The CDE anticipates no needed changes to its current physical security practices, as the platform for CALPADS will be hosted at Teale. Physical access to server and network equipment at Teale is restricted and is only accessible through card key access by authorized Teale staff.

The CDE will manage all logical access to CALPADS information through system and application-level security, and will utilize group policy objects for security administration. The CDE will apply group policy objects to authorize user access to specific data elements on a need-to-know basis only. This will prevent unauthorized users from creating, reading, updating, or deleting sensitive CALPADS data for which they are not primarily responsible.

The CDE will implement CALPADS to meet the states and its own information security standards. A summary of major user groups, including those identified by SB 257, and their access rights follows:

- County offices of education, school districts, charter schools, and state agencies with responsibility for education will be allowed Internet to access the CALPADS ODS, either interactively or through batch data transfer via secure FTP or HTTPS. This will be required to provide a unique user name and strong password, and to possess a digitally signed public key infrastructure (PKI) X.509[2] certificate for mutual authentication. LEA users will be allowed to access and update their own data. They will be allowed to create, read, update, and logically (but not physically) delete selected student, teacher, and institution data. However, they will be allowed read-only access to historical demographic and achievement data and to current student achievement data.
- Evaluators of public school programs, legislative policy analysts, and education researchers from established research organizations will be required to submit qualifying credentials to the CDE that allows the CDE to qualify the researcher. Qualified researchers will be required to submit their requests for CALPADS data to the CDE for review. The CDE will review the purpose of each qualified researcher's request for CALPADS data, track each request in accordance with Federal Education Rights and Privacy Act (FERPA) and state privacy requirements, construct the data set requested, and transmit the data set to the requestor.
- Test vendors using the Internet to access the CALPADS ODS through batch data transfer via secure FTP or HTTPS will be required to provide a unique user name and strong password, and to possess a digitally signed public key infrastructure (PKI) X.509 certificate for mutual authentication. Test vendors will be allowed to access and update

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[2] The X.509 is a widely used specification for digital certificates that has been a recommendation of an international communication standards body since 1988.

their own data only. They will be allowed to create, read, update, and logically (but not physically) delete current student achievement data only.

- Authorized CDE data administration personnel using the Internet to interactively access the CALPADS ODS will be required to provide a unique user name and strong password, and to possess a digitally signed public key infrastructure (PKI) X.509 certificate for mutual authentication. They will be authorized to tune the database, convert logical deletions to physical deletions, and to archive data beyond the retention period.

As indicated in Exhibits 5-2 and 5-3, the CDE will utilize the following security services to safeguard CALPADS data:

- PKI X.509 digital certificates. The digital certificate is sent along with an encrypted message to verify that the sender is truly the entity identifying itself in the transmission.
- HTTPS, used for accessing a secure Web server
- Secure sockets layer (SSL) version 3.0 with 128-bit encryption and triple data encryption standard (DES) cipher strength.

In addition, the CDE will maintain a dedicated T-1 data line for the exchange of CALPADS data to increase security and minimize potential disruption on other systems and users.

5.1.13 Confidentiality

CALPADS will be designed, developed, and implemented to conform to the Family Educational Rights and Privacy Act (FERPA) and state privacy requirements. Confidentiality will be maintained through a group policy, object-based security scheme. In addition, data displayable via pre-defined queries and reports executed on the query version of the CALPADS database will be suppressed according to the "Rule of Ten." In other words, when disaggregating longitudinal student achievement data by one or more student attributes, including any and all demographic or program participation attributes, query results will be hidden from view where 10 or fewer students are members of the subset defined by the selected attributes. In no case shall any group score be reported that would deliberately or inadvertently make public the score or performance of an individual pupil.[3] The CDE will provide CDs containing non-personally identifiable student-level data to researchers on a case-by-case basis. To receive student-level data, researchers must: (1) submit their requests to the CDE, (2) submit qualifying credentials to the CDE, (3) be subject to a CDE-administered vetting process, and (4) agree in writing to destroy sensitive student-level data after they have completed their research, or the passage of time. The CDE will develop regulations that, among other provisions, will define privacy and access protocols consistent with FERPA requirements.

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[3] Title 5 Code of California Regulations, §893 (Reporting Test Scores) establishes this requirement. NCLB requires that LEA report cards "do not reveal personally identifiable information about an individual student" (20 USC §6311(h)(2)(D)).

5.1.14 Impact on End Users

The CDE assumes that in the context of this FSR, the primary end users will be LEA personnel responsible for data management. Project implementation will require dedicated human resources from each LEA to assist with data migration (including data quality assurance) and acceptance testing. Use of the new system will require training and technical support in the initial stages of implementation. Impacts of CALPADS are more fully presented in sections 3.1.7 and 3.2 of this FSR.

Proposed capabilities for CALPADS will make LEA end users more efficient and effective in performing data management functions. The desired outcome will be a system that:

- Enables LEA staff to more fully account for the student population (enrollment, dropout, and graduation data)
- Eases the LEA burden of data quality management at test time, by facilitating data cleansing activities throughout the academic year
- Encourages LEAs to exercise better local data management practices that impact high stakes accountability results
- Improves the quality of data gathered from LEAs
- Reduces LEA workload associated with the pre-ID process by offloading this task to the CDE
- Provides an online (albeit rudimentary) education administration system for student, teacher, and institution data for small LEAs (less than 300 students).

5.1.15 Impact on Existing Systems

System impacts resulting from the implementation of CALPADS will be minimal, as CALPADS will function primarily as a repository for longitudinal student achievement and other NCLB-related data from existing source systems, both internal and external to the CDE. CALPADS will passively receive source data from these systems, as they will push data to CALPADS. Under the current proposed solution, CALPADS will not actively pull data from any source system.

CALPADS will require modification of the source system interfaces identified in section 5.1.7, as the CDE intends to modify the data interchange specifications for these systems to more effectively meet the demands of NCLB, SB 1453, and SB 257.

The CDE intends to convert data collected about students and tests for school years 2005/06 and 2006/07 tests, and convert data collected about teachers from CBEDS for school years 2005/06 and 2006/07. The CDE estimated the costs to convert these data, which include the cost to develop data conversion software that the systems integrator then will use to convert these data to CALPADS, and to confirm that results of this conversion meet requirements of the test plan. Section 8 EAWs include these one-time costs.

5.1.16 Consistency with Overall Strategies

The project to develop and implement CALPADS is consistent with the CDE's business and information technology strategies. The CDE identifies CALPADS on page 54 of its approved Agency Information Management Strategy (AIMS) document.

Furthermore, state legislation (SB 1453) requires that the CDE contract for the development of proposals, which will provide for the implementation of CALPADS. CALPADS also will help the CDE meet reporting requirements mandated by federal NCLB legislation.

5.1.17 Impact on Current Infrastructure

The impact of CALPADS on the desktop computing environment at the CDE and at LEAs will be minimal because the CDE expects the selected CALPADS solution to be based on a Web services architecture that will rely only on a standard Web browser at the desktop. This will allow complexities associated with implementation and ongoing operation of CALPADS to be largely hidden from the end user.

The impact of CALPADS on the CDE's back-office computing environment will be minimal, as CALPADS will comply with current CDE Technology Services Division standards. In addition, the CALPADS platform will be hosted at Teale to minimize the burden associated with ongoing operation and maintenance of CALPADS on existing TSD staff.

In addition, the CDE will work with Teale to establish and maintain a dedicated T-1 data line for the exchange of CALPADS data. Doing so will increase security and minimize potential disruption on other CDE systems and users. The CDE included the one-time and monthly maintenance costs for this line in the Section 8 EAWs.

5.1.18 Impact on Data Center(s)

The CALPADS platform will be hosted at Teale. The CDE discussed CALPADS with its Teale representative, submitted Teale's "Customer Requirement" and "Request for Services" forms, and requested a quote from Teale to procure and maintain the infrastructure required to meet CALPADS business needs. The CDE includes Teale's cost estimate in the Section 8 EAWs.

5.1.19 Data Center Consolidation

As presented earlier in Exhibit 5-2, CALPADS will consist of an operational data store that complies with Internet-based standards for interoperability, communications, data interchange, and information security. The potential hardware, software, and access methods require the services of a consolidated data center. The CDE plans to use Teale to provide these services. Hosting CALPADS at Teale complies with the State Administrative Manual (SAM). SAM Section 4982.1 requires that *"[t]he Stephen P. Teale Data Center (Teale) shall serve all other agencies in the state* [including the CDE] *whose application needs require the services provided*

by a consolidated data center." The CDE does not have a compelling business requirement for alternate siting of CALPADS.

Housing CALPADS at Teale is also consistent with a recommendation from the recently released California Performance Review. In Chapter 7, Statewide Operations, SO12 (Consolidate State Data Centers, Servers and Storage) the CPR recommends:

> *"The Governor should direct the Teale Data Center and the Health and Human Services Agency Data Center to immediately begin expanding their server hosting and management services and aggressively market them to state government agencies and departments. The Governor should direct the Department of Finance, or its successor, to support this effort."*

5.1.20 Backup and Operational Recovery

The CALPADS project team will work closely with Teale personnel to establish an operational recovery plan for CALPADS. To facilitate operational recovery, the project team and Teale will develop routine backup and replication strategies to support the rapid operational recovery of CALPADS. The CDE includes Teale's costs for this support in the EAWs within Teale's monthly service charge.

5.1.21 Public Access

CALPADS will not provide the public direct access to the database. However, the public and schools may access summarized data generated from CALPADS data via the CALPADS query database, Dataquest, and other CDE information websites. Authorized access to CALPADS data by researchers will be handled as described in sections 5.1.12 and 5.1.13, above. Access will be managed in a way that accommodates the data security, privacy, and confidentiality requirements imposed by FERPA and state privacy laws.

5.1.22 Costs and Benefits

In Section 8 of this FSR, the CDE presents the assumptions made and estimated costs for CALPADS. In summary, the CDE estimates one-time acquisition and development costs for CALPADS will be $9.6 million over a 3.5 year period, for the following services:

❑ Project management	$735,228
❑ Solicitation document development	472,983
❑ Independent project oversight	518,094
❑ Business process improvement	136,700
❑ Systems integration	5,174,090
❑ Teale Data Center (hardware/software purchases)	828,597

❑ Software tools purchase	304,600
❑ State of California staff assistance	1,384,255
Total	**$9,554,547**

The CDE estimates that on-going maintenance and operations costs for CALPADS will be $1,850,728 per year. The CDE intends to contract for operations and maintenance of CALPADS because it does not currently have the positions required to provide this support.

The impact and benefits of CALPADS are described in sections 3.1.7 and 3.2 of the FSR. The CDE expects that CALPADS will:

- ❑ Improve the accuracy of NCLB reporting
- ❑ Provide a better means of evaluating educational progress and investments over time
- ❑ Reduce data collections
- ❑ Reduce test vendor responsibilities and charges.

5.1.23 Sources of Funding

The CDE presents the funding plan in section 8 of this FSR, Exhibit 8-4. Under Title VI, Part A, Section 6111, the U.S. Department of Education will provide funding to help states that already have developed required assessments in grades 3-8 for the purpose of improving the dissemination of performance information or to assist in linking student achievement, enrollment, and graduation records over time.[4] Therefore, the CDE intends to fund the entire one-time cost to develop CALPADS using Title VI funds. There are no state matching requirements. The funds will be for state operations, not local assistance. This assumes that the State Legislature and the Governor choose this funding source.

The CDE submitted a BCP for the CALPADS project in 2005-06. The CDE understanding that the Governor's 2005 budget provides $688,000 for CALPADS as a placeholder pending approval of this FSR. Funding for systems integration services must be provided in the 2006 Budget for fiscal year 2006/07. The CDE will submit a budget change proposal requesting funding for CALPADS in fiscal year 2006/07.

5.2 Rationale for Selection

The proposed solution represents the most cost-effective alternative available to the CDE. The proposed solution:

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[4] Education Commission of the States, *No Child Left Behind Policy Brief: State Information Systems.*

- Satisfies the CDE's business needs, objectives, and functional requirements specified in Section 3 of the FSR
- Addresses data quality management by recognizing the role of LEAs as owners and stewards of student, teacher, and institution-level data
- Enables CDE to gain from education industry experienced vendors and system integrators to present the most cost-effective integrated solution that satisfy the functional requirements specified in Section 3.4 Business Functional Requirements of the FSR.
- Enables LEAs to submit and correct student-level demographic and program participation data throughout the academic year, in advance of testing windows
- Positions both the CDE and LEAs for full compliance with SIF specifications, in the future
- Avoids the substantial technology investment required to fully implement SIF specifications, while allowing the specifications to continue to evolve, to support NCLB vertical reporting requirements
- Provides the CDE with the flexibility to streamline existing data collections, thus reducing the reporting burden on LEAs.

5.3 Other Alternatives Considered

The CDE considered the following solution alternatives.

5.3.1 Alternative 1 – Add Longitudinal Data Repository to Existing Data Collections

This alternative is the procurement and implementation of an "add-on" longitudinal data repository solution that minimally impacts existing business processes. The CALPADS longitudinal data repository would be designed and implemented as an "add on" capability to existing CDE data collections processes and would load student-level demographic and assessment records now provided by test vendors to the CDE into CALPADS. CALPADS would extract data elements required for NCLB reporting from existing CBEDS and ConApp databases. Access, query/reporting, security, and operations functionality for CALPADS would be similar to that proposed for alternative 2. In addition, the NCLB related data collected via CBEDS and ConApp would continue to be collected and available only in aggregate form. LEAs would continue to provide pre-identification and student-level demographic records to test vendors, and would continue submitting information required for CBEDS and ConApp as they do now with no improvement in data quality or processing efficiencies. Test vendors would continue accepting pre-ID records from LEAs, providing assessment records to CDE, and providing reports and quality control functionality to LEAs. With the current test vendor data correction process and the lack of direct data reporting from the LEAs to CDE, it is anticipated

that State reporting results will continue to generate concerns and questions related to the reporting statistics' accuracy and validity.

5.3.1.1 Description

- ❑ Implements unique student IDs to facilitate the longitudinal collection and storage of student-level data
- ❑ Implements an operational data store as a repository for student, teacher, and institution-level data required for NCLB reporting
- ❑ Implements a data extract, transform, and load (ETL) capability that must support multiple disparate data source interfaces (e.g., CBEDS, ConApp, test vendors, etc.)
- ❑ Continues to rely on the CDE's existing data collection and reporting methods
- ❑ Continues to rely on test vendors as the primary conduit for all student-level data submissions and corrections.

5.3.1.2 Benefits

- ❑ Minimizes impact on existing data collection and reporting methods
- ❑ Meets the legislative mandates of SB 1453 and 257.

5.3.1.3 Advantages

- ❑ Potentially lowers one-time costs to implement than proposed solution
- ❑ Minimizes risk due to limited business process change.

5.3.1.4 Disadvantages

- ❑ Does not address existing data quality issues which currently impact State reporting statistics such as API, AYP, graduation rate calculations
- ❑ Does not provide sufficient time for LEAs to review and correct student demographic and program data because LEAs are not allowed to submit student-level data to the CDE throughout the academic year and to cleanse their data before testing, not only after testing, as is the case now
- ❑ Does not reduce or eliminate the costly involvement of the Test Vendors in the data collection and correction process
- ❑ Does not encourage LEAs to exercise better local data management practices that impact high stakes accountability results
- ❑ Does not streamline current data collection processes or allow for additional streamlining in the future
- ❑ Requires multiple disparate data collection interfaces

- Does not allow CDE to reduce either lag time or resources expended to manage changes made by LEAs to student demographic and program participation information
- Lacks support for an automated, transparent process to submit required LEA data, but rather requires LEAs to initiate and transfer files
- Does not support Schools Interoperability Framework (SIF) architecture components, limiting CDE's ability to establish a more efficient data collection approach that will reduce the burden on LEAs.

5.3.2 Alternative 2 – Implement Integrated Longitudinal Data Collection and Repository System (Proposed Solution)

This alternative is the procurement of an integrated longitudinal data collection and repository solution that:

- Recognizes LEAs' role as data owners and stewards by taking test vendors out of the data quality management loop
- Provides LEAs with an extended data correction window, well in advance of testing, as well as after testing, and allows LEAs to review and correct student data without test vendor involvement
- Implements a data extract, transform, and load capability to populate the operational data store, and provide timely data quality feedback to LEAs (single input process)
- Reduces LEA data submission requirements for specific CBEDS and ConApp data reporting requirements
- Implements unique student IDs to facilitate the longitudinal collection and storage of student-level data
- Partially implements the latest SIF specifications (SIF-compliant data object architecture) thus enabling for full SIF compliant implementation in the future
- Provides the CDE with the flexibility to streamline existing data collections, thus reducing the reporting burden on LEAs.

This is the proposed solution described in Section 5.1 Solution Description.

5.3.3 Alternative 3 - Implement Integrated Longitudinal SIF Compliant Data Collection and Repository System

This alternative is the same as alternative 2, with one additional characteristic. The CDE would procure a system that fully implements the latest SIF specifications (SIF-compliant data object architecture and SIF-compliant, message-oriented web services architecture).

5.3.3.1 Description

- ❑ Recognizes LEAs' role as data owners and stewards by taking test vendors out of the data quality management loop
- ❑ Provides LEAs with an extended data correction window, well in advance of testing, as well as after testing, and allows LEAs to review and correct student data without test vendor involvement
- ❑ Implements a data extraction, transformation, and load capability to populate the operational data store, and provide timely data quality feedback to LEAs (single input process)
- ❑ Reduces LEA data submission requirements for specific CBEDS and ConApp data reporting requirements
- ❑ Implements unique student IDs to facilitate the longitudinal collection and storage of student-level data
- ❑ Fully implements the latest SIF specifications (SIF-compliant data object and zone integration server architecture) thus enabling submission of student, teacher, and institution-level data from LEAs to the CDE in an event-driven manner
- ❑ Updates the CALPADS operational data store current in near real time.

5.3.3.2 Benefits

- ❑ Seamlessly and transparently updates the CALPADS operational data store via the latest SIF compliant architecture model
- ❑ Allows LEAs to better address the challenges associated with student mobility
- ❑ Addresses interoperability issues at both intra-district and inter-district levels
- ❑ Meets the legislative mandate of SB 1453 and 257.

5.3.3.3 Advantages

- ❑ Streamlines data collection and reporting processes to the maximum extent possible
- ❑ Most effectively addresses data quality issues by providing near real-time feedback to LEAs
- ❑ Takes advantage of the momentum building within the K-12 education data management and analysis markets space around the SIF specification.

5.3.3.4 Disadvantages

- ❑ Imposes potentially higher one-time costs to implement than proposed solution, given that each LEA or consortia of LEAs would be required to implement zone integration servers and develop agents that allow automated updates of CALPADS data

- Relies on SIF specifications that are still evolving, especially as they relate to vertical reporting requirements for NCLB, which potentially increases project risk
- Imposes the most business process change, which potentially increases project risk and potentially increases on-going project costs.

5.3.4 Alternative 4 – Implement Commercial-off-the-Shelf Data Collection and Repository System

This alternative is procurement of a single commercial-off-the-shelf (COTS) solution that meets the CDE's business requirements. A single COTS solution often provides a lower cost/lower risk solution if a suitable application or system can be found.

The CDE conducted informal market research to determine whether any COTS solutions could substantially satisfy its functional and technical requirements.

The CDE conducted an extensive Internet search to gather information on vendors that provide data management and analysis products and services to state and local education agencies. A partial list of search topics included:

- No Child Left Behind Act of 2001
- Longitudinal student data systems
- Education data warehouse
- Family Educational Rights and Privacy Act
- Schools Interoperability Framework
- National Center for Education Statistics
- Performance-based data management initiative.

The CDE used results of its preliminary Internet search to guide further inquiry. The following whitepapers were instrumental in guiding the CDE's subsequent research:

- No Child Left Behind Policy Brief: State Information Systems, published by Education Commission of the States – provides a list of states that have implemented longitudinal student achievement data systems
- Making Sense of the Data: Overview of the K-12 Data Management and Analysis Market, published by EduVentures, Inc. – provides an overview of vendors that provide data management and analysis products and services to state and local education agencies.

Using the aforementioned EduVentures, Inc. publication and other secondary sources, the CDE identified several data management and analysis vendors offering products and services to the K-12 education market in the following categories:

- Systems integration services

- ❑ Data modeling and extract, transform & load (ETL) products and services
- ❑ Data warehousing products and services
- ❑ Data analysis and reporting products and services
- ❑ Value-added analysis services.

The CDE gathered marketing collateral and whitepapers from several vendor websites to develop an overall awareness of the K-12 education data management and analysis market space. The CDE also met with several vendors that offer products and services in this market space to gain an understanding of the scope of their product and service offerings, and how these offerings are positioned within this space.

The CDE identified fewer than one-half dozen major players in the current market that have an extensive background in longitudinal student achievement data systems and are sufficiently established to serve as the primary systems integrator for the CALPADS project. In addition to these major firms, there are no more than two-dozen potentially viable vendors that provide specialized software integration services or COTS products to perform data collection; extract, transform and load; data analysis and reporting, and value-added analysis functions. Many of these firms, especially the niche players, specialize in delivering their products and services to local education agencies, not large state departments of education.

Exhibit 5-4, on the following pages, provides a summary of the K-12 education data management and analysis market space.[5]

[5] Adapted from Making Sense of the Data: Overview of the K-12 Data Management and Analysis Market, EduVentures, Inc.

Exhibit 5-4 Data Management and Analysis Vendor Characterization

Vendor Name	Vendor Scale	Target Market	Product / Service Emphasis	K-12 Data Mgmt Revenue
Systems Integration				
IBM	Large	States, large districts	Service	$10-25M
BearingPoint, Inc.	Large	States, large districts	Service	$10-25M
Extract, Transform & Load				
SAS Institute	Large	States, large districts	Product, service	$10-25M
eScholar, LLC	Medium	Medium, large districts	Product, service	$5-10M
TetraData Corporation	Medium	Medium, large districts	Product, service	$5-10M
Otis Educational Systems, Inc.	Small	Medium, large districts	Product, service	$1-5M
Data Warehousing				
SAS Institute	Large	States, large districts	Product, service	$10-25M
eScholar, LLC	Medium	Medium, large districts	Product, service	$5-10M
TetraData Corporation	Medium	Medium, large districts	Product, service	$5-10M
Data Analysis and Reporting				
EDmin.com, Inc.	Large	States, large districts	Service	$10-25M
SAS Institute	Large	States, large districts	Product, service	$10-25M
Cognos, Inc.	Medium	Medium, large districts	Product	$5-10M
The Pulliam Group	Medium	Medium districts	Service	$5-10M
Hyperion Solutions Corporation (Brio)	Medium	Medium, large districts	Service, product	$5-10M
Standard & Poor (School Evaluation Services)	Medium	States	Service	$5-10M
TetraData Corporation	Medium	Medium, large districts	Product, service	$5-10M
Business Objects S.A.	Medium	States, large districts	Product	$1-5M
SchoolNet, Inc.	Small	Medium, large districts	Service	$1-5M
Triand / EdGate	Small	States, large districts	Service	$1-5M

(continued on next page)

Exhibit 5-4 Data Management and Analysis Vendor Characterization ***(continued)***

Vendor Name	Vendor Scale	Target Market	Product / Service Emphasis	K-12 Data Mgmt Revenue
Value-Added Analysis				
EDmin.com, Inc.	Large	States, large districts	Service	$10-25M
SchoolNet, Inc.	Small	Medium, large districts	Service	$1-5M

From **Exhibit 5.4** on the preceding pages, it is clear that no single vendor covers all aspects of the data management and analysis market space. The CDE was not able to identify a comprehensive COTS data management and analysis solution suitable for collecting and managing longitudinal student achievement data, and NCLB vertical reporting for the large number of public school students and LEAs in California. Therefore, CDE must engage the services of a systems integrator to assemble products and services from one or more players in the market space to implement a comprehensive longitudinal data collection and repository system to meet CDE's NCLB reporting requirements.

5.3.5 Alternative 5 –Transfer an Existing Public Domain Longitudinal Data Collection and Repository System

This alternative is the procurement of a system integration vendor to modify, test, and implement a selected existing public domain longitudinal data repository and reporting system that has been transferred to the State of California. The vendor would provide analysis, system design, development, and implementation services necessary modify the public domain system to fully meet the CALPADS requirements. This alternative assumes the existence of a suitable public domain longitudinal data management and analysis environment and that system has been transferred to the State of California. To determine the existence of such a public domain system, the CDE conducted a survey of other states' data management and analysis system implementations and conducted on-site reviews of two local education agency application environments.

To assess existing public domain longitudinal data repository systems, the CDE conducted a second round of surveys. For this second round, the CDE developed, based on DOF's direction, a 98-item questionnaire based on the functional requirements outlined in the original FSR submission to gather information related to the public domain system's characteristics and whether that system met the functional requirements included in this FSR. This questionnaire enabled CDE to assess the feasibility and functional suitability of the target system to meet the CALPADS objectives and functional requirements. The CDE distributed the survey to 14 state and local government agencies purported to have student-level data collection and/or repository

systems. The CDE conducted the survey and assessment primarily via phone calls and working with state agencies to gather their responses to the questionnaire. In addition, the CDE conducted an on-site survey and interview with the staff from two of the local agencies, the California School Information System (CSIS), and the Los Angeles Unified School District (LAUSD). In addition to the questionnaire, CDE requested system and technical documentation to gain an understanding of the system's functionality and assess the level of system documentation and the approach and methodology utilized in the development and implementation of the systems.

This alternative solution also assumes the potential public domain system will be transferred at no or minimal cost to the State of California. Once transferred, the CDE will procure a vendor to provide the system integration services to implement and potentially maintain the transferred system. To enable CDE the option to maintain the final CALPADS system, the potential transferred system must have been developed and implemented primarily on CDE's technology platform standards. For this approach to be considered feasible for implementation at CDE and to avoid the implementation of "dated" technology approaches, the CDE established mandatory baseline criteria for the system to be considered as a potentially viable candidate system for transfer to the State of California. The public domain system must meet all of the following **baseline** criteria:

- ❑ System must be in statewide production providing longitudinal storage of student-level records (demographic, program participation, achievement data, enrollment, and graduation data) in a single fully integrated database structure accessible to end users to submit, store, and report student-level and NCLB related data
- ❑ System must be fully web-enabled and provide secure user authentication and role-based security model for on-line data inquiry and end user reporting functions.
- ❑ System must utilize the key CDE technology architecture standards for the database platform, development language(s), and server operating system.
- ❑ System must have been implemented within the last three years and in production for at least one year
- ❑ System must support at least a 10-digit unique non-personally identifiable statewide student identifier
- ❑ System must comply with FERPA privacy requirements for supplying collected K-12 data to external requestors
- ❑ Owning agency agrees to transfer their public domain longitudinal data collection and reporting system (all program source code and documentation) components to the State of California for no or minimal cost.

Exhibit 5-5, below, provides a summary of the baseline criteria results for each agency's public domain system that sufficiently responded to the CDE's survey.

Exhibit 5-5 Public Domain System Baseline Assessment Criteria Results

Entity	Production Longitudinal Student Assessment System	Web-enabled and role-based security model	Adheres to CDE technology architecture standards	Implemented within 3 years and 1 year in production	Supports 10-digit unique non-personally identifiable student identifier	Complies with FERPA privacy requirements	Agency agrees to transfer
LAUSD	✓	✓		✓	6	✓	7
CSIS		✓	✓	✓	✓	✓	8
Wyoming		✓			✓		NR
Texas	✓						✓[9]
Nevada		✓	✓		✓	✓	10
Oregon	✓	✓	✓	✓		NR	✓[11]

[6] System currently uses an identifier which contains personal information. LAUSD is in the process of moving to a non-personally identifiable student identifier as part of their new School Information System (SIS) implementation.

[7] Decision Support System (DSS) is not available for transfer. However, LAUSD proposed a full partnership with the State of California.

[8] State Reporting and Records Transfer System (SRRTS)is not available for transfer. However, CSIS will license SRRTS for the State of California's use.

[9] System may be available for transfer, however, a legal opinion would be required to review and prepare a transfer agreement

[10] System is not available for transfer. Code developed and owned by the State of Nevada could be transferred. However, system functionality enabled by vendor-supplied software is proprietary and would have to be licensed from the vendor.

[11] System has been transferred to three other states. However, in two of the states, the system is not being utilized. The CDE was unable to confirm the status of the third states' implementation progress or status

NR = No response

In addition to the above baseline criteria, per DOF's direction the public domain systems were evaluated against the FSR functional requirements to determine if their system substantially meets the functional requirements and therefore would be suitable as a candidate for transfer. To minimize the risks associated with transferring and implementing an externally developed application environment, the target system should match a significant portion of the CALPADS requirements. Unfortunately, of the six systems surveyed, only four provided sufficient responses to the functional component of the survey to establish an opinion on the suitability of their respective implementation. The States of Wyoming and Oregon did not provide responses to the functional characteristic component of the FSR public domain survey. The LAUSD, CSIS, and Texas responses indicated their systems provide varying levels of matching functionality to the CALPADS requirements.

The LAUSD Decision Support System consists of a production data warehouse and reporting environment. This environment provides data reporting and analysis functionality well beyond the requirements delineated by SB 1453. During discussions with LAUSD management, they informed the CDE they were not interested in just "transferring" their technology solution to the State of California for the State's independent use. Rather, they proposed a full partnership approach where the LAUSD and the State of California jointly utilize the DSS environment and share in the implementation and ongoing maintenance cost. Based on this proposal, the CDE viewed this partnership approach more closely to an outsourcing solution since the CDE does not support the DSS technology platform and would be required to rely completely on LAUSD's technology staff to operate and maintain the DSS environment. Please review Alternative 6 in this section for the assessment of the LAUSD proposed approach.

The CSIS SRRTS environment has been providing state reporting functionality to the CDE for nearly four years on behalf of approximately 220 LEAs participating in the CSIS state reporting program. At the present time, the SRRTS solution does not support the collection and retention of the data necessary to meet CDE's NCLB vertical reporting requirements related to highly qualified teachers, paraprofessionals, and persistently dangerous schools. In addition, the current SRRTS implementation does not support the longitudinal retention and reporting capabilities as required by the CALPADS functional requirements. However, as stated in the proposed solution section of this FSR, CSIS will provide and maintain the unique state student identifier (SSID) for all public school students and is currently in the process of assigning the SSIDs to all enrolled students.

The Texas implementation was originally implemented in 1987. The legacy technology platform does not conform to the CDE's standard technology platform and therefore, this environment would not be a feasible candidate for transfer to the State.

Based on the information CDE was able to gather from the survey questionnaire and on-site interviews with State and local education agencies, the CDE was unable to identify a viable public domain data management and analysis solution that substantially meets the CDE's

business requirements for collecting and managing longitudinal student achievement data, and NCLB vertical reporting. Although the CDE was unable to identify a public domain system as a viable candidate for transferring to the State of California, the CDE would not preclude a bidder from proposing an existing public domain system as the baseline or platform for their proposed solution in meeting the CALPADS functionality requirements. As stated previously, to potentially leverage the investment that State has made, the CDE will request that all bidders submitting proposals in response to the CALPADS RFP to assess the viability of leveraging the CSIS State Reporting and Records Transfer System (SRRTS) within their proposed solution

5.3.6 Alternative 6 – Outsource the Longitudinal Data Collection and Repository System

This alternative is outsourcing to an application service provider (ASP) for the hosting of a data management and analysis solution that meets the CDE's business requirements for collecting and managing longitudinal student achievement data, and NCLB vertical reporting. Outsourcing can provide a low-risk solution, if a suitable ASP can be found that offers a solution that matches the scope of the CDE's business needs, at a reasonable cost per student.

In determining "reasonable cost per student", the CDE considered that SB 1453 specified that $6 million may be used for the development an implementation of CALPADS. Therefore, the CDE utilized an industry-experienced "guideline" based on 25% of the development cost for the ongoing maintenance cost as a reasonable comparison.

The CDE conducted informal market research to determine whether any outsourced solutions offered by ASPs could substantially satisfy its functional requirements. The CDE met with Information Technology and Assessment staff at the Los Angeles Unified School District (LAUSD) to review the features and functions of the District's Oracle-based K-12 education data warehouse and decision support system, called the LAUSD-DSS, and to explore whether the CDE might be able to leverage the LAUSD-DSS through a mutually beneficial partnership arrangement with the district. In addition, the CDE gathered information on the data management and analysis capabilities of an ASP it is already working with through the Migrant Education Program, Tromik / WestEd. The CDE also met with other vendors offering ASP hosting services in the K-12 education data management and analysis market space, including Triand / EdGate and SAS Institute[12], to gain an understanding of the scope of their service offerings, and how these offerings are positioned within this space.

[12] SAS Institute is primarily a product company, but offers the Education Value-Added Assessment System (EVAAS) as an outsourced solution to state departments of education,

Exhibit 5-6, below, provides a summary of the NCLB data collection and reporting domains supported by the aforementioned entities.

Exhibit 5-6 Supported NCLB Data Collection and Reporting Domains, and Reporting Capabilities

Entity	Longitudinal Student Assessment Results	Student Profile (demo-graphics)	Adequate Yearly Progress	Highly Qualified Teacher	Instructional Para-professional	Persistentl y Dangerous Schools	Web-based End User Reporting [13]	Web-based Value Added Analysis Reporting[14]
LAUSD-DSS	✓	✓	✓	(a)			✓	
Tromik / WestEd	✓	✓						
Triand / EdGate	✓	✓	✓				✓	✓
SAS-EVAAS	✓	✓	✓	(a)			✓	✓

a. In development.

[13] General end user selection-based reporting and decision support and summary style reporting with “drill-down” capabilities

[14] Value-added and/or business intelligence reporting functions including predictive trend reporting and business-based analysis calculations and performance management presentation methods

The LAUSD implemented DSS to support the collection, management, analysis, and reporting of K-12 education data including: student assessment; enrollment and attendance; graduation and promotion; academic support; special education; student locator; key performance indicators for schools; single plan; accounts payable; and employee demographics. DSS appears to be a robust and relatively flexible data warehouse environment capable of meeting a wide variety of information needs within the District. However, it does not currently support all of the CDE's NCLB vertical reporting requirements related to paraprofessionals and persistently dangerous schools and goes well beyond what is required by the CDE to support NCLB vertical reporting in its ability to accommodate human resource and financial data. Currently, the LAUSD technology division has 15 PYs dedicated to supporting and maintaining the DSS environment. The District's recurring annual cost to support and maintain the DSS is approximately $2 million, or $2.67 per student (based on approximately 750,000 enrolled K-12 students). The CDE believes the governance process necessary to guide the maintenance and enhancement of the system to satisfy the needs of both the District and the CDE could be cumbersome. Therefore, the CDE concludes that the costs required to operate and maintain a statewide data warehouse environment could be excessive, relative to its needs. The CDE notes, however, that although the LAUSD DSS environment clearly goes beyond the scope defined in SB 1453, the analytical and decision support capabilities of a statewide data warehouse environment would clearly provide a significant benefit to local education agencies.

Tromik and WestEd are currently working under contract to support the data collection and reporting needs of the CDE's Migrant Education Program (MEP). The data Tromik / WestEd currently collects and maintains for the MEP is a small subset of the data that would be required to support the CDE's NCLB vertical reporting needs, both in terms of the student population served and the kind of data collected. Tromik's / WestEd's recurring annual cost to support the MEP is approximately $6.50 per student. Though there would likely be some economies of scale in supporting a larger student population, the costs associated with the addition of needed functionality to address all of CDE's NCLB reporting needs could offset any economies of scale. Therefore, the CDE believes the cost of this approach would be excessive.

Triand and EdGate are currently supporting NCLB data collection, reporting, and records transfer (student transcripts) capabilities for the Texas Education Agency (TEA) through an outsourced approach. At the present time, Triand's / EdGate's solution does not support all of the CDE's NCLB vertical reporting requirements related to highly qualified teachers, paraprofessionals, and persistently dangerous schools. The annual recurring cost for Triand's / EdGate's current service offering is approximately $1.00 – $1.50 per student. With the addition of the functionality required to meet all of CDE's NCLB reporting needs, the CDE believes the cost of this approach would be excessive.

SAS-EVAAS currently supports the collection, management, analysis, and reporting of K-12 education data for the Tennessee Department of Education and has done so for many years. In addition, SAS-EVAAS provides selected levels of their available services to several other states. At the present time, SAS-EVAAS supports the data management and analysis for student assessment data only. However, SAS-EVAAS is in the process of adding support for highly qualified teacher data. SAS-EVAAS currently charges $2.50 per student, per year. The costs associated with the addition of needed functionality to address all of CDE's NCLB reporting needs would drive the annual cost per student even higher. Therefore, the CDE believes the cost of this approach would be excessive.

In conclusion, the CDE was not able to identify a cost-effective service offering from an ASP to meet its NCLB vertical reporting needs.

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6 Project Management

The California Department of Education (CDE) is committed to the success of the California Longitudinal Pupil Achievement Data System (CALPADS). To this end, the CDE has developed a project management plan that complies with Department of Finance's (DOF) Information Technology Project Management Methodology (as presented in the State Information Management Manual) and will be used to assure success of this project.

This project management plan is presented in the following sections:

6.1. Project Manager Qualifications

6.2. Project Management Methodology

6.3. Project Organization

6.4. Project Priorities

6.5. Project Plan

6.6. Project Monitoring

6.7. Project Quality

6.8. Change Management

6.9. Authorization Required.

6.1 Project Manager Qualifications

The person responsible for the CALPADS must have the skills and knowledge to lead the project effort through implementation. Specifically, the contract/project manager must meet the following minimum qualifications:

- Previous experience in the state's procurement and reporting processes
- Previous experience and success in managing projects of this size, scope, and complexity
- Knowledge of project management concepts and techniques, including management of change, issues, risk, quality, schedule, deliverables, vendor, and budget
- Knowledge of team leadership principles
- Ability to work with other organizations in order to establish a process for sharing data
- Knowledge of data management and data conversion

- Knowledge of programs and issues related to No Child Left Behind Act of 2001 (NCLB) reporting requirements and student assessment processes
- Ability to clearly communicate project status and change management issues to all levels of departmental management
- Ability to develop and maintain detailed project schedules.

6.2 Project Management Methodology

The CDE's adopted Project Management Methodology (PMM) is based on guidelines in the Statewide Information Management Manual (SIMM), section 200. The CDE PMM includes the recommended project management and risk management practices of the Department of Finance information technology project oversight framework. The CDE PMM also reflects industry best practices and lessons learned.

The CDE project manager will use Microsoft Project to develop the project schedule and to manage and track the progress of the project. The CDE project manager will be required to identify tasks and activities for inclusion in the project plan, as well as report status for each of their assigned tasks throughout the project.

6.3 Project Organization

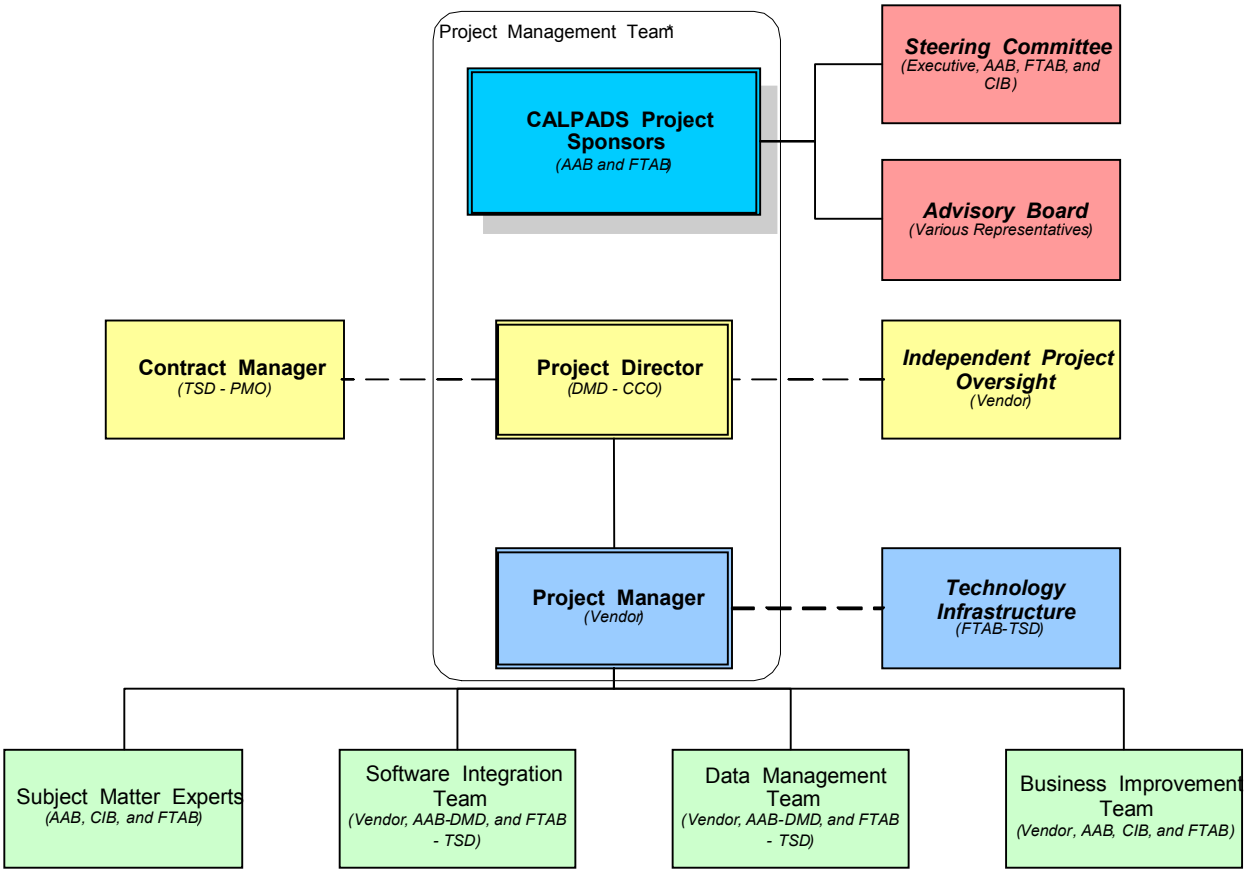
Exhibit 6-1, following this page, presents the project organization for CALPADS. Our organization includes the Senate Bill 1453 CALPADS advisory board, and a steering committee made up of CDE management who will be involved in all project phases.

6.4 Project Priorities

All projects have three components that must be managed: schedule, scope, and resources. These three factors are interrelated. A change in one factor may result in a change in another factor.

For CALPADS implementation, the schedule is the component that is somewhat flexible and can be adjusted if necessary. Project scope is constrained and has the least amount of flexibility because California's Education Code establishes the goals and capabilities of CALPADS. However, there is limited flexibility regarding features that might be added or omitted as the project evolves. Resources are the most flexible aspect of this project and the easiest component to adjust.

Exhibit 6-1 CALPADS Project Organization



* Project Management Team also includes CDE Chief Information Officer and the Director of CDE's Data Management Division

The relative importance of each factor, in terms used by the Department of Finance, is as follows.

Schedule	Scope	Resources
Accepted	Constrained	Improved

These terms are those used by the Department of Finance in the instructions for preparing an FSR.[1] These instructions provide the following definitions of the terms used above:

- "Constrained" means the factor cannot be changed
- "Accepted" means the factor is somewhat flexible to the project circumstance
- "Improved" means that the factor can be adjusted.

6.5 Project Plan

Project planning defines the project activities to be performed, end products to be delivered, and how the activities will be accomplished. The purpose of project planning is to define each major task, estimate the time and resources required, and provide a framework for management review and control. The project planning activities and goals include defining:

- Project scope
- Project assumptions
- Project phasing (i.e., approach)
- Project team roles and responsibilities
- Project schedule.

The five subsections that follow provide an overview of each of these areas.

6.5.1 Project Scope

The project scope defines the business processes and systems that form the logical boundaries of the business areas directly included in the CALPADS project. The CALPADS project scope includes a wide-range of CDE organizational units that currently are responsible for supporting, managing, and producing reports required to meet the statewide assessment and federal NCLB requirements. These state assessment and NCLB reporting requirements are summarized in **Figure 6.1**, on the following page.

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[1] *Feasibility Study Report Preparation Instructions*, September 2002, page 21.

Figure 6.1 CALPADS Project Scope

Assessment Information	Individual Student Information	NCLB Reporting
❑ STAR – Standardized Testing And Reporting ❑ CAHSEE – California High School Exit Exam ❑ CELDT – California English Language Development Test	❑ California School Information Services (CSIS) Unique Student Identifier ❑ Demographic data elements ❑ Program participation data elements ❑ Discipline data elements	❑ AYP – Adequate Yearly Progress ❑ API – Academic Performance Index ❑ Schools in Program Improvement ❑ Graduation and Dropout Rates ❑ Highly Qualified Teachers ❑ Emergency or Provisional Teacher Credentials ❑ English Language Acquisition ❑ Student Discipline Data

This project will consist of those activities required to design, test, and implement a system that meets each of the functional requirements listed in Section 3.4 of this Feasibility Study Report (FSR). In addition, the project's scope includes training provided to those end-users directly impacted by CALPADS.

CALPADS will capture and maintain "transaction" data. These transactions are the individual student assessment records linked to student demographic and program participation data. LEAs will submit their individual student data and other NCLB required information to meet state and federal reporting requirements. The LEAs will be responsible for maintaining the accuracy of the CALPADS data through regular update submissions or on-line updates.

The CDE intends to provide secured access to the data via an Internet browser and pre-defined or "canned" queries set up for end users. These queries will either be attached to a button or will prompt the user to qualify the query based on input values or to add any desired qualifications to limit the search (e.g., a year). The canned reports will be viewable and printable, and can be manipulated using predefined prompts. The system will allow the user to request from CDE a file containing the individual student records that support the reports.

CALPADS will not be a "data warehouse." That is, the system will not maintain the detail and summary aggregations of student-level transactions in a manner specifically designed to support elaborate and complex data selection queries for decision support analysis and research.

A number of CDE organizational units utilize various application systems, software tools, and third-party vendors to capture, manage, and process student assessment data and various data elements necessary to meet NCLB reporting requirements. The existing automated and manual systems consist of disparate, independent application environments resulting in isolated data repositories, duplicate data, and non-standard data elements and formats across the applications. In many cases, existing collection processes capture just the aggregate data necessary to meet the federal reporting requirements under NCLB. However, current applications and data collection processes do not capture all data elements at the individual detailed level required to meet the longitudinal student data needs, as defined in SB 1453.

Existing NCLB and SB 1453 requirements do not require a direct link between student achievement and their teachers. Therefore, CALPADS does not include this functionality. Should this become a requirement, each teacher would require a unique identifier and each course would be required to map to a standard statewide course code.

6.5.2 Project Assumptions

Major project assumptions include:

- Funds will be available throughout the project's life
- The development and maintenance phases of the CALPADS project will be funded through federal funds provided annually in the State Budget Act
- Functional requirements will not substantially change during the project
- Higher priority issues will not impact the schedule or resource needs
- Executive sponsorship will continue through project completion
- The Department of General Services (DGS) will review and approve the proposed procurement approaches defined in the Information Technology Procurement Plan (ITPP) for this project by October 27, 2004
- The Department of Finance (DOF) will review and approve the FSR by October 27, 2004
- The CDE will utilize a traditional procurement approach to procure software integration services
- The CDE will continue to receive funding for an experienced project manager to provide project management services for the duration of CALPADS project. The CDE has procured an experienced project manager utilizing the Master Services Agreement (MSA) process. The project manager will provide the project management services for the duration of the CALPADS project.

- The CDE will procure independent project oversight services to oversee the software integration vendor selection and evaluation process through the duration of the CALPADS implementation phase.
- Negotiations with suppliers will result in a budget no greater than that estimated in section 8 of this FSR, and will result in an executed contract as scheduled
- Qualified CDE program and technical staff, as well as representative districts selected to assist the CDE, will be available to participate, as needed in design, development, testing, and implementation of the proposed solution
- For the development, maintenance and on-going support for CALPADS, CDE will receive approval for the requested staff positions
- Suppliers, State, and district staff will perform enhancements in a competent manner
- Every K-12 student will have one, and only one, unique student identifier on or before the date needed by CALPADS
- State and district program staff will 'take ownership' and 'buy into' the new system
- All new hardware and software required for CALPADS will comply with CDE technology standards approved at time of contract execution
- The development, test, staging, and production environments for CALPADS will reside at the state's Teale Data Center in Sacramento as prescribed by SAM section 4982.1.

6.5.3 Project Phasing

Exhibit 6-2, on the following pages, provides a summary of CALPADS phases. Following Exhibit 6-2 is a summary of each phase.

Exhibit 6-2 CALPADS Project Phases

Phase/ State	Phase/Stage Name	Estimated Start	Estimated End
Phase I: Analysis and FSR/ITPP Vendor Procurement			
Stage 1	Business Environment Review and Project Set-up	Nov 14, 2003	Nov 21, 2003
Stage 2	Current Environment Evaluation and Review	Nov 21, 2003	Jan 21, 2004
Stage 3	FSR/ITPP Solicitation Document Development	Jan 9, 2004	Feb 3, 2004
Stage 4	FSR/ITPP Solicitation Document Distribution and Vendor Response	Feb 4, 2004	Feb 19, 2004
Stage 5	CALPADS Project Business Plan Development	Jan 23, 2004	Mar 9, 2004
Stage 6	FSR/ITPP Vendor Evaluation and Selection	Feb 19, 2004	Apr 1, 2004
Phase II: FSR/ITPP Development and Approval			
Stage 1	Needs Assessment and FSR/ ITPP Development	Apr 2, 2004	Aug 19, 2004
Stage 2	Control Agency FSR/ITPP Review of Submission 1	Aug 20, 2004	Jan 12, 2005
	FSR/ITPP Submission 2 Revision	Jan 13, 2005	Apr 6, 2005
	Control Agency FSR/ITPP Review and Approval of Submission 2	Apr 7, 2005	Jul 5, 2005
Stage 3	Issues Management Plan Development	Aug 20, 2004	Sept 15, 2004
Stage 4	Communication Plan Development	Apr 21, 2005	May 18, 2005
Phase III: Software Vendor Procurement and Contract Approval			
Stage 1	RFP Vendor Solicitation and Selection	Jul 6, 2005	Aug 17, 2005
Stage 2	IPOC Solicitation and Selection	Jun 20, 2005	Apr 6, 2006
Stage 3	CALPADS Detailed Requirements Definition	Aug 18, 2005	Nov 14, 2005
Stage 4	RFP Development	Oct 18, 2005	Mar 14, 2006
Stage 5	Control Agency RFP Review and Approval	Mar 15, 2006	May 24, 2006
Stage 6	Systems Integration Vendor Evaluation and Selection	May 25, 2006	Jan 11, 2007
Stage 7	Contract Approval	Jan 12, 2007	Apr 9, 2007
Stage 8	Business Process Improvement Vendor Solicitation and Selection	Apr 9, 2007	Jun 15, 2007

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Exhibit 6-2 CALPADS Project Phases *(continued)*

Phase IV: System Development and Implementation			
Stage 1	Project Start-up	Apr 11, 2007	Apr 25, 2007
Stage 2	Systems Analysis and Confirmation (Gap Analysis)	Apr 18, 2007	May 16, 2007
Stage 3	Systems Design	May 17, 2007	Sep 10, 2007
Stage 4	Data Conversion Software Development	Sep 18, 2007	Jan 11, 2008
Stage 5	Systems Development	Aug 27, 2007	Dec 28, 2007
Stage 6	Systems and Integration Testing	Dec 31, 2007	Mar 21, 2008
Stage 7	User Acceptance Testing	Mar 24, 2008	May 16, 2008
Stage 8	Pilot and Implementation	May 19, 2008	Aug 8, 2008

Phase I: Analysis and FSR/ITPP Vendor Procurement

This phase establishes the project management infrastructure and selects and procures a vendor to develop the FSR and Information Technology Procurement Plan (ITPP) documents required by state control agencies to grant project approval. Upon completion of this phase, the CDE will have developed a high-level assessment of the current assessment program areas and supporting business functions, defined and documented the major project execution activities, and selected a vendor to develop the FSR and ITPP documents.

Phase II: FSR/ITPP Development and Approval

This phase involves development and approval of the FSR and ITPP documents. The State Administrative Manual (SAM) requires an agency conduct a feasibility study and prepare a FSR to initiate new projects meeting specified criteria. The DGS requires an ITPP be submitted concurrently with the FSR document to DGS for its review and approval. The ITPP document provides an assessment of the available procurement options and indicates CDE's selected approach. During this phase, the selected vendor will perform a needs assessment, evaluate and assess alternative technology approaches, evaluate and assess procurement approaches, and develop the FSR and ITPP documents according to the DOF Office of Technology Review, Oversight, and Security (OTROS) document guidelines. These documents will be reviewed and approved by CDE and submitted as a package to DOF/OTROS, and DGS for their review and approval. The FSR/ITPP vendor will provide assistance to answer and address questions from the control agencies during the review and approval process.

Phase III: Software Vendor Procurement and Contract Approval

This phase involves definition of detailed CALPADS requirements, development of a request for proposal (RFP), evaluation and selection of a software integration vendor to implement the

CALPADS environment, and development and submission of evaluation and selection summary documents for control agency review and approval. The CDE anticipates some of the detailed system requirements definition activities will be conducted concurrently with the control agency review and approval stage described in Phase II: FSR/ITPP Development and Approval. However, the procurement of the RFP Development Services will not occur until approval has been received from the control agencies.

Phase IV: System Development and Implementation

This phase involves design, development, testing, and implementation of the CALPADS environment. The CALPADS software integration vendor will confirm the functional requirements, then design, develop, test, and implement all components of the new CALPADS application environment and business processes. This phase will require significant involvement from CDE end-users, managers, and appropriate stakeholders to design the application menus, data entry forms, system interfaces, business rules, and data conversion processes. The CDE expects that the new CALPADS environment will eliminate some current CDE data collection processes. Other CDE program area applications and processes that rely on current data collection process may require modification to receive their input data from the CALPADS environment upon production implementation.

The CDE will contract with a vendor to conduct business process improvement work steps to develop and implement improved business processes and procedures to leverage the CALPADS environment.

Exhibit 6-3, on the following pages, identifies major deliverables from each phase.

Exhibit 6-3 CALPADS Key Deliverables

Phase/ State	Phase/Stage Name	Deliverable
Phase I: Analysis and FSR/ITPP Vendor Procurement		
Stage 1	Business Environment Review and Project Set-up	❑ Phase I and II Detailed Work Plan
Stage 2	Current Environment Evaluation and Review	❑ Current Environment Review
Stage 3	FSR/ITPP Solicitation Document Development	❑ FSR/ITPP Solicitation Document
Stage 4	FSR/ITPP Solicitation Document Distribution and Vendor Response	❑ Vendor Responses
Stage 5	CALPADS Project Business Plan Development	❑ CALPADS Business Plan
Stage 6	FSR/ITPP Vendor Evaluation and Selection	❑ FSR Vendor Contract
Phase II: FSR/ITPP Development and Approval		
Stage 1	Needs Assessment and FSR/ ITPP Development	❑ CALPADS Business Needs Assessment ❑ CALPADS Feasibility Study Report ❑ CALPADS Information Technology Procurement Plan
Stage 2	Control Agency FSR Review and Approval	❑ Control Agency Approval
Stage 3	Issues Management Plan Development	❑ Issues Management Plan
Stage 4	Communication Plan Development	❑ Communication Plan
Phase III: Software Vendor Procurement and Contract Approval		
Stage 1	RFP Vendor Solicitation and Selection	❑ RFP Vendor Contract
Stage 2	IPOC Solicitation and Selection	❑ IPOC Contract
Stage 3	CALPADS Detailed Requirements Definition	❑ CALPADS Detailed Requirements
Stage 4	RFP Development	❑ Request for Qualifications ❑ Draft Request for Proposal ❑ Final Request for Proposal
Stage 5	Control Agency RFP Review and Approval	❑ Control Agency Approval
Stage 6	Systems Integration Vendor Evaluation and Selection	❑ Evaluation and Selection Summary ❑ Systems Integration Vendor Selection
Stage 7	Contract Approval	❑ Systems Integration Vendor Contract
Stage 8	Business Process Improvement Vendor Solicitation and Selection	❑ BPI Vendor Contract

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Exhibit 6-3 CALPADS Key Deliverables *(continued)*

Phase IV: System Development and Implementation		
Stage 1	Project Start-up	❑ Task-Based Project Work Plan
Stage 2	Systems Analysis and Confirmation (Gap Analysis)	❑ Gap Analysis
Stage 3	Systems Design	❑ Development Technology Environment ❑ Technology Architecture Plan ❑ Application Prototype ❑ Detailed System Design ❑ System Design Document (SDD) ❑ Integrated Logical Data Model ❑ Data Maps to Current Production Data ❑ Data Dictionary ❑ Data Conversion Plan ❑ Testing Plan ❑ Implementation Plan ❑ Systems Maintenance Plan ❑ Transition Plan
Stage 4	Data Conversion Software Development	❑ Data Conversion Software
Stage 5	Systems Development	❑ CALPADS Application ❑ Physical Database ❑ New Business Processes Documentation ❑ Data Maps ❑ Data Conversion Software ❑ End User and LEA Technical Procedures Manuals
Stage 6	Systems and Integration Testing	❑ Systems Interfaces ❑ Testing Environment ❑ Converted Test Data ❑ Data Conversion Results Report ❑ Test Cases ❑ Systems Integration Test Results
Stage 7	User Acceptance Testing	❑ User Acceptance Test Script ❑ User Acceptance Testing Environment ❑ User Acceptance Test Results ❑ Final Data Conversion ❑ Production Technology Environment ❑ End User Systems Training ❑ Operational Systems Training ❑ User Manual

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Exhibit 6-3 CALPADS Key Deliverables *(continued)*

Phase IV: System Development and Implementation *(continued)*		
Stage 8	Pilot and Implementation	❑ Transition and Implementation Plan ❑ LEA Training Completed ❑ Final Pilot and Implementation Approach ❑ Help Desk Environment ❑ Systems Maintenance Manual ❑ Training Materials and Sessions ❑ Converted Production Data ❑ Tuned and Optimized Database ❑ Tuned and Optimized CALPADS ❑ CALPADS in Full Production ❑ Post Implementation Evaluation Report (PIER)

6.5.4 Project Team Roles and Responsibilities

The major participants in the project will be the project sponsors, project director, project manager, the CALPADS Advisory Committee, and program leads. A formal project structure provides participants with a clear understanding of the authority and responsibility necessary for successful accomplishment of project activities, and enables project team members to be held accountable for effective performance of their assignments.

Exhibit 6-4, on the following pages, summarizes key CALPADS project roles and respective responsibilities.

The CDE established a steering committee for the CALPADS project. The purpose of the steering committee is to:

- Provide oversight for the CALPADS project
- Serve as a liaison to stakeholders and other interested parties
- Address policy or procedure issues identified during the CALPADS project.

Exhibit 6-4 Project Team Roles and Responsibilities

Responsibilities	Organizations
1. Project Sponsors	
❑ Serves as the key business decision-makers of the project ❑ Resolves significant issues and scope changes that cannot be resolved by the CALPADS project management team ❑ Makes the final decision on the vendors retained throughout the CALPADS project ❑ Attends monthly CALPADS project management team meetings ❑ Attends steering committee meetings ❑ Communicates project status to CDE management and the other stakeholders	❑ AAB ❑ FTAB
2. Project Director	
❑ Assists in the coordination of work efforts that may impact the project ❑ Resolves significant project issues ❑ Attends monthly CALPADS project management team meetings ❑ Leads steering committee meetings ❑ Communicates project status to internal and external stakeholders, as needed ❑ Review and approve all project deliverables	❑ AAB – DMD
3. Project Manager	
❑ Coordinates and oversees project activities ❑ Develops project management-related deliverables ❑ Serves as a liaison between vendors and internal/external stakeholders ❑ Resolves and tracks project issues ❑ Proposes actions or strategies to resolve significant project issues ❑ Ensures all problems, issues, and changes are recorded, maintained, and tracked in the program's tracking database ❑ Maintains project work plan ❑ Tracks project budget and reviews vendor invoices ❑ Institutes controls to determine adherence to the work plans and schedule ❑ Develops and executes the risk management plan ❑ Maintains *CALPADS Business Plan* document ❑ Reviews and approves all deliverable expectation documents (DEDs) and final deliverables ❑ Reviews all project deliverables ❑ Coordinates and conducts monthly CALPADS project management team meetings and CALPADS advisory committee meetings ❑ Attends steering committee meetings ❑ Conducts weekly project team meetings ❑ Develops weekly project status reports ❑ Ensures active and timely participation of program/business unit staff for the life of the project	❑ Vendor

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Exhibit 6-4 Project Team Roles and Responsibilities *(continued)*

Responsibilities	Organizations
4. Project Management Team	
(Consists of project sponsors, project director, project manager, CDE PMO, and CDE's director of the Data Management Division) ❑ Communicates project status and updates to the project sponsors ❑ Assists in the resolution of significant issues related to project management, project communication, project staffing, and project scope ❑ Participates in the final decision on the vendors retained throughout the CALPADS project ❑ Attends monthly project management team meetings	❑ AAB – DMD ❑ FTAB – TSD
5. Steering Committee	
❑ Assists in the identification of business needs and defines business policies and procedures ❑ Confirms project goals and scope ❑ Assists in the resolution of project issues ❑ Attends steering committee meetings ❑ Communicates project status to respective external stakeholders, as needed	❑ AAB (DMD, P&ED, S&AD) ❑ FTAB (TSD, TSD-PMO) ❑ CIB (LS&PD, PD&CISD) ❑ SDOB (CSD) ❑ Executive
6. Advisory Board	
❑ Establishes privacy and access protocols ❑ Provides general guidance ❑ Makes recommendations relative to data elements	❑ AAB – DMD ❑ LAO ❑ LEAs ❑ Researchers
7. Contract Manager	
❑ Participates in the procurement processes to secure systems integration/business process improvement services, project management services, RFP development services, and independent project oversight services ❑ Reviews and approves invoices ❑ Maintains information on contracted costs vs. actual costs ❑ Manages contract change requests and addendums ❑ Serves as liaison to DGS and DOF/OTROS	❑ TSD – Project Management Office (PMO)

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Exhibit 6-4 Project Team Roles and Responsibilities *(continued)*

Responsibilities	Organizations
8. Independent Project Oversight Contractor	
❑ Serves as an independent expert that provides supplemental assistance in managing all of the activities that are critical to the project's success ❑ Oversees the project to ensure that it is following a structured and defined project management approach ❑ Reviews all draft and final deliverables to ensure that they are aligned with defined standards, CDE's needs, and contractual requirements ❑ Prepares periodic project assessment and develops monthly DOF/OTROS progress reports and provides copies to CALPADS project management	❑ Vendor ❑ (To be determined)
9. Technology Infrastructure Manager	
❑ Coordinates and oversees the establishment and operation of the CALPADS Project's technological environment including the server(s), project team's workstations, network connection, development software, and database environment ❑ Participates in the determination of technology architecture required for system interfaces ❑ Participates in the procurement processes to secure systems integration/business process improvement services, project management services, RFP development services, and independent project oversight services ❑ Attends monthly CALPADS project management team meetings ❑ Participates in meetings with the Teale Data Center	❑ FTAB – TSD
10. Subject Matter Experts	
❑ Provide frank and candid input to business needs, assessments, evaluations, and the final solution ❑ Assist in the definition of business processes and business rules related to student assessment and NCLB data collection and reporting requirements ❑ Assist in the identification of potential new policies and procedures ❑ Participate in interviews and working sessions with the CALPADS project team ❑ Communicate project status to respective internal stakeholders, as needed ❑ Participate in system integration and user acceptance testing	❑ AAB ❑ CIB ❑ FTAB ❑ Advisory Board

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Exhibit 6-4 Project Team Roles and Responsibilities *(continued)*

Responsibilities	Organizations
11. Software Integration Team	
❑ Designs and develops the CALPADS environment, as defined by the functional requirements and business needs ❑ Conducts prototyping sessions with internal and external stakeholders. ❑ Conducts system design and development walkthrough sessions ❑ Conducts unit and systems Integration tests ❑ Develops test scripts for user acceptance testing ❑ Oversees user acceptance testing ❑ Develops system documentation ❑ Determines technology architecture required for system interfaces ❑ Coordinates with representatives from other internal and external systems to which CALPADS will interface ❑ Designs, tests, and documents system interfaces ❑ Develops user manuals, addresses user questions and issues (e.g., help desk) ❑ Develops training materials and conducts training sessions	❑ Vendor ❑ AAB – DMD ❑ FTAB – TSD
12. Data Management Team	
❑ Defines current and future data elements, data relationships, and data definitions ❑ Designs logical data model and develops data dictionary ❑ Conducts data model walkthrough sessions ❑ Develops and maintains physical data model ❑ Serves as a resource to the software integration team	❑ Vendor ❑ AAB – DMD ❑ FTAB – TSD ❑ CIB
13. Business Improvement Team	
❑ Defines and implements new business processes ❑ Assesses organizational impact and determines optimal organizational structure, skills, and operation processes ❑ Designs business processes and transaction steps ❑ Documents and provides training on new business processes and transaction steps	❑ Vendor ❑ AAB – DMD ❑ FTAB – TSD ❑ CIB

During early phases of the project, the CALPADS steering committee should meet on a bi-monthly basis. If project issues arise that require the steering committee's input, the CALPADS project manager may schedule steering committee meetings more frequently or as deemed necessary. The CALPADS project manager will develop an agenda for each meeting and distribute it prior to the meeting. The CALPADS project manager will capture, document, and distribute to all CALPADS steering committee members minutes from each meeting.

Figure 6.2, below, lists members of the CALPADS steering committee.

Figure 6.2 CALPADS Steering Committee Members

Member	Role	Organization
Susie Lange	Project Sponsor	Finance, Technology, and Administration Branch (FTAB)
Geno Flores	Project Sponsor	Assessment and Accountability Branch (AAB)
Camille Maben	NCLB Stakeholder	Executive – Office of Superintendent
Keric Ashley	Business Stakeholder	AAB – Data Management Division (DMD)
Kevin Matsuo	Technology Stakeholder	FTAB – Technology Services Division (TSD)
Pat McCabe	Accountability Stakeholder	AAB – Policy and Evaluation Division
Jeanne Ludwig	NCLB Stakeholder	Curriculum and Instruction Branch (CIB) – Professional Development and Curriculum Instruction Support Division
Deborah Sigman	Assessment Stakeholder	AAB – Standards and Assessments Division
Marta Reyes	NCLB Stakeholder	School and District Operations Branch (SDOB) – Charter School Division
Robin Rutherford	NCLB Stakeholder	CIB – Learning Support and Partnership Division
David Kopperud	NCLB Stakeholder	CIB – Learning Support and Partnership Division
Joe Barankin	NCLB Stakeholder	AAB – School and District Accountability Division
Ken Okuhara	Contract Manager/ Technology Infrastructure	TSD – Project Management Office
Paula Mishima	Project Director	DMD – Education Data Office
Dan Conway	Project Manager	TSD – Project Management Office
Software Integration Vendor	Software Integration Vendor Project Manager	Vendor (TBD)

6.5.5 Project Schedule

In subsection 6.5.3 (Project Phasing), the CDE provided a schedule for the project's phases and high level tasks ("stages") and project deliverables. The project schedule reflects the following:

- High level tasks include procurement, design, development/programming and/or software modification, data conversion, installation, training for end users, and training for technical staff
- The schedule allows for status reporting against which CDE will monitor completion of tasks during the course of the project. The schedule provides the duration of critical tasks, major management decision points, and progress reporting milestones
- Milestones reflect products and major events that are readily identified as completed or not completed on the specified due date
- Milestones are spaced at reasonable intervals that allow management and control agency monitoring of the project's progress.

The CDE made a number of assumptions to prepare the project schedule, including the following:

- The time required from when CDE submits the FSR for control agency review to obtaining final approval from control agency will be two months
- The time required from when CDE submits the RFP for control agency review to getting final approval from control agency will be two months
- The time required from release of the RFP through selection of the systems integrator will be eight months. This time frame will be influenced by a number of factors, including the number of vendors who submit proposals, the number and type of questions that vendors submit, and changes in legislation
- The time required from selection of the systems integrator to contract approval will be three months. The CDE will submit the selection to DGS, along with the evaluation and selection report. Within these three months, the CDE assumes a two-week protest period.

6.6 Project Monitoring

Project monitoring is a critical activity in any project effort to continual assess and evaluate the project activity progress, issues management, risk management, scope control, project budget, and project resource management processes. The project manager and the CDE's project management team will have the primary responsibility to monitor project progress and the selected system integration vendor. During the development of this FSR, the CDE

performed a project criticality assessment following the guidelines described in the Information Technology Project Oversight Framework document. Based on this project assessment as presented in the Figure 6.3, the CALPADS project produced a Project Criticality Rating value of medium.

Figure 6.3 Information Technology Project Oversight Framework Project Criticality Assessment

Factor		Rating	Numerical Rating	Comments
1. Project Size				
Estimated one-time cost	$9.6M	High	3	Estimated period from project approval to initial implementation is greater than 24 months. Increase rating by 1 level.
2. Project Manager Experience		Low	1	
3. Team Experience				
Rating for team		Medium	2	75% of key staff must have finished at least 1 'like' project
4. Project Type		Medium	2	Highest of the two
Hardware				
New install	Medium			
Software				
COTS Update/Upgrade	Medium			
		Total	8	
		Project Rating (Total/4)	2	Medium[2]

Although not required based on the medium project criticality rating, the CDE will contract with an Independent Project Oversight Contractor (IPOC) to provide project oversight and review activities for the CALPADS project as required by SB 1453. The selected IPOC will meet the reporting requirements and project oversight and evaluation requirements as stated in SB 1453. Should the DOF determine and assign the CALPADS project a higher criticality rating, the CDE will contract for an Independent Verification & Validation (IV&V) contractor. It should be noted that there could be an increase to the project oversight cost.

[2] Rating values: 1 = Low, 2 = Medium, 3 = High

The CDE will monitor this project utilizing structured project management processes and follow the guidelines as described in the Information Technology Project Oversight Framework to minimize the project risks associated with informal project management practices. The CDE will utilize the following processes and approach for tracking and reporting on the status of project deliverables, project schedule, and project budget :

- **Conduct Weekly Team Meetings**. On a weekly basis, project status meetings will be held. These meetings will be conducted by the project manager and involve contracted and non-contracted project team members. The major areas of discussion will include schedule and deliverable status, upcoming events (e.g., meetings, interviews, working sessions, etc.), issue log review, and relevant miscellaneous topics.
- **Conduct Monthly Project Management Meetings**. On a monthly basis, the CALPADS project director and project sponsors will meet with the project manager to review the project. During these meetings, the project status, upcoming events, outstanding issues, and project schedule will be discussed.
- **Prepare and Distribute Weekly Status Report**. Weekly, the project manager will develop and distribute a CALPADS *Project Status Report* to the project director and project sponsors. This report represents the activities performed by all project team members during the previous week and includes information on accomplishments, activities in progress, upcoming activities, issues, and deliverable status.
- **Contract with an Independent Project Oversight Contractor (IPOC)**. The CDE will contract with a third-party vendor to perform IPOC functions for the CALPADS project. The responsibilities of the IPOC vendor are provided in the roles and responsibilities subsection.

6.7 Project Quality

In order to establish that the CALPADS solution meets identified statutory goals, business objectives and requirements, and technical objectives and requirements, a quality assurance plan will be developed based on the Department's *Project Management Methodology*, which aligns with the Department of Finance's *Statewide Information Management Manual* project management methodology. This plan will establish that the CALPADS project results meet the business and technical objectives. This will be accomplished through well-defined requirements that the project manager will track through assessment, validation, verification, and acceptance testing.

The CDE requires that every work product or deliverable satisfy the project's requirements and objectives with minimal errors and defects. In order to minimize the risk of receiving a work product or deliverable of poor quality, a *Deliverable Expectations Document* (DED) will be

developed prior to the start of any major deliverable. The project will identify the following in the DED:

- Deliverable name
- Deliverable description
- Deliverable outline
- Deliverable due date
- Deliverable reviewers
- Deliverable sign-off sheet.

The project manager, contract manager, and project director are responsible for reviewing and approving each DED. The project manager will conduct walkthroughs of each deliverable, unless the project manager grants an exemption. The IPOC will review a draft and final version of the deliverables, as well as participate in the walkthrough sessions. The project manager and project director will complete a deliverable sign-off sheet upon receipt of a completed and approved deliverable. The vendor must attach this sign-off sheet to vendor invoices in order for the Contract Manager to process the invoice for payment.

Staff involved with the CDE's Data Management Improvement Program (DMIP) will assist the CALPADS project team, particularly during planning, analysis, and development activities. The DMIP is currently developing a preferred variation in a common data architecture for each data element collected by the CDE. DMIP will help ensure that CALPADS collects data in the CDE's preferred variation. Doing so will increase the likelihood that the CDE maintains consistent and common data definitions and that CALPADS more easily integrates with existing CDE systems and processes.

The CDE published information technology standards for desktops, workgroups, infrastructure, and web content will be maintained. The standards applicable to this project are shown in Table 4-1 (Baseline Analysis section).

6.8 Change Management

The project manager will follow a change control process that meets requirements of the Department's Project Management Methodology, which aligns with Department of Finance's Statewide Information Management Manual IT project management methodology. The CALPADS project manager and project director will generate a baseline project plan. This baseline project plan will be adjusted and aligned with the software integration vendor's proposed project plan as part of the Project Start Up and Gap Analysis stage within Phase IV System Development and Implementation. The CALPADS project management team will

identify and manage subsequent proposed changes to the project scope, schedule, or resource requirements.

The CDE intends to keep change management as simple as possible. The following change management process will allow the CALPADS project manager to determine appropriate actions if an emergency change request is submitted, but also permits deliberation and control over all requests for changes:

- The initiator must direct any proposed project changes to the CALPADS project manager. The initiator must submit a change request that documents the proposed change's scope, reason, project budget impact, project schedule impact, and impact of not incorporating the change.
- The CALPADS project manager will log all change requests and track progress through resolution.
- The CALPADS project manager will perform the following duties related to project change issues:
  - Log and evaluate requests
  - Review all major requests with the technical and customer program managers, and the contractor project manager
  - Make the change, reject the change, or submit the change to the project sponsors, CDE chief information officer (CIO), and CALPADS project director.
- If the change is submitted to the project sponsors, CIO, and CALPADS project director, that group will recommend implementation or rejection of the change.
- If the recommendation is to implement the change, the CALPADS project director and the project manager will determine the timeframe and process for implementation and adjust project scope, resources, schedule, and vendor's contract as needed.
- Decisions made by the project sponsors, CIO, and CALPADS project director are final.
- The CALPADS project manager will send a notification of change decisions to the requestor and to other team members, as appropriate.

6.9 Authorization Required

The project requires approval from the CDE project sponsors, the CDE CIO, and CDE executive management. The project also requires approvals for project technical approach and expenditures (Department of Finance) and procurement approach (Department of General Services). The U.S. Department of Education is not required to review or approve procurement and expenditure plans.

7 Risk Management

The California Department of Education (CDE) is committed to the success of the California Longitudinal Pupil Achievement Data System (CALPADS). To this end, CDE has developed and will use a risk management plan that complies with the Department of Finance's Information Technology Project Management Methodology (as presented in the State Information Management Manual) to assure success of this project.

The CDE includes the costs for managing risk in the estimated cost for CALPADS, as presented in Section 8 of this feasibility study report, Economic Analysis Worksheets. Specifically, the CDE estimated the level of effort (in state and vendor days) to institute each step in the risk management approach presented below, and also for each preventative maintenance measure identified below. The CDE assumed a daily cost for each day (as explained in Section 8) to estimate the cost for the activity. The CDE also estimated the approximate level of effort (again in days), and applied the assumed daily cost, in order to estimate costs for the CDE project management team to design, implement, and monitor the risk management plan.

This risk management plan is presented in the following sections:

7.1. Risk Management Approach

7.2. Risk Management Worksheet

7.3. Risk Tracking and Control.

7.1 Risk Management Approach

Risk management is the systematic process of identifying, analyzing, and responding to project risks. It includes maximizing the probability and consequences of positive events and minimizing the probability and consequences of adverse events to project objectives.[1]

A project risk is any factor that may potentially interfere with successful achievement of the project's goals and objectives. Every project involves risk. Consequently, CDE's approach to risk management identifies, describes, and evaluates potential project risks, defines mitigation

[1] Project Management Institute, *A Guide to the Project Management Body of Knowledge, 2000 Edition.*

strategies (as needed), monitors the identified risks throughout the project, and provides a method to identify new risks during the course of the project.

Risk management is a key responsibility of the CALPADS project management team. The risk management roles of various members of the project management team are described below:

- **Project Director –** The project director has overall responsibility for the CALPADS project and for implementing the system. The project director will review and approve the risk management plan, assist in identifying project risks, review the CALPADS project issues log, and approve mitigation strategies. In addition, the project director will meet on a regular basis with the independent project oversight consultant to discuss the project's risks.
- **Project Manager –** In addition to identifying risks, the project manager will develop and maintain the risk management plan, maintain the issues log, develop mitigation strategies and contingency plans, and monitor project risks.
- **Independent Project Oversight Consultant (IPOC) –** In addition to identifying risks, the IPOC will be responsible for assisting the project manager in identifying mitigation strategies, developing contingency plans, and monitoring project risks. On a monthly basis, the IPOC will meet with the project director and project manager to discuss the status of the project, including project risks.

The steps for CDE's risk management approach are presented in the following subsections:

- Risk Assessment
- Risk Identification
- Risk Analysis and Prioritization
- Risk Response
- Risk Avoidance
- Risk Acceptance
- Risk Mitigation.

7.1.1 Risk Assessment

The CALPADS project management team will be responsible for assessing project risks throughout the entire life cycle of CALPADS project. Risk assessment involves the process of identifying risks, analyzing and quantifying risks, and prioritizing risks. The risk assessment process will be performed during the planning stages of the project and regular reviews will continue throughout the life of the project. To effectively manage risks associated with the

CALPADS project, the project manager and project management team must stay fully aware of the following CALPADS characteristics:

- System-related information (e.g., hardware, software, system interfaces, data and information, persons that support and use CALPADS, and system and data sensitivity)
- Functional requirements
- Users of the system (e.g., system users who provide technical support to CALPADS, and application users who use CALPADS to perform business functions)
- System security policies governing CALPADS (security and access protocols developed by the CALPADS advisory board, organizational policies, federal requirements, laws, and industry practices)
- System security architecture
- Current network topology (e.g., network diagram)
- Information storage protection that safeguards system and data availability, integrity, and confidentiality
- Flow of information pertaining to CALPADS (e.g., system interfaces, system input, and output flowchart)
- Technical controls used for CALPADS (e.g., built-in or add-on security product that supports identification and authentication, discretionary or mandatory access control, audit, residual information protection, and encryption methods)
- Management controls used for CALPADS (e.g., rules of behavior, security planning)
- Operational controls used for CALPADS (e.g., personnel security, backup, contingency, and resumption and recovery operations; system maintenance; off-site storage; user account establishment and deletion procedures; and controls for segregation of user functions, such as privileged user access versus standard user access)
- Physical security environment of CALPADS (e.g., facility security, Teale Data Center policies)
- Environmental security implemented for CALPADS processing environment (e.g., controls for humidity, water, power, pollution, temperature, and chemicals).

The CALPADS project manager is responsible for working with key project stakeholders to assess identified threats to the CALPADS processing environment, and the potential vulnerability of CALPADS to these threats. This includes categorizing, analyzing, quantifying, and prioritizing each project risk identified.

7.1.2 Risk Identification

The CDE's risk management approach is based on early detection, swift response, vigilant monitoring, impact minimization, and thorough recovery. The CDE plans to facilitate early detection by encouraging CALPADS project stakeholders and project team members to identify possible CALPADS risks, which are vulnerabilities (flaws or weaknesses) that could be exploited by some circumstance or event. The CALPADS project management team will encourage any person identifying potential project risks to communicate them to the project management team. This will occur through both formal mechanisms, such as risk assessment worksheets, project status meetings, risk assessment sessions, and informal mechanisms, such as phone calls and emails. The project manager and independent project oversight consultant will document and evaluate each of the identified risks.

7.1.3 Risk Analysis and Prioritization

Once a project risk is identified, the CALPADS project management team will assess the risk for project impact and probability of occurrence. To determine impact, the CALPADS project management team will asses the adverse impact that a risk may have on the loss or degradation of any, or a combination of any, of the following three characteristics: (1) system and data integrity, (2) system availability, and (3) system and data confidentiality.

Together, impact and probability constitute a measure of risk priority. High-priority risks may require immediate action. Lower-priority risks may require monitoring. A project risk that is determined by the project management team to be of little or no consequence will be entered into the risk database for monitoring. The CALPADS project management team will pay attention to risks with increasing risk priorities to determine the need for a response.

To determine risk priorities, the CALPADS project management team will use the risk priority matrix (RPM), which is shown in **Figure 7.1**, on the following page. The priority level assigned by the CALPADS project management team will help to determine the amount of effort and type of action necessary to minimize the impact of each identified project risk. Definitions of each of the elements used in the RPM are listed below the matrix.

Figure 7.1 Risk Priority Matrix

Impact on Project Goals and Objectives	Probability of Occurrence	Risk Priority
High	High	High
	Medium	
	Low	Medium
Medium	High	
	Medium	
	Low	Low
Low	High	
	Medium	
	Low	

Impact

- High – The risk represents a significant impact on the project's business objectives, budget, or schedule
- Medium – The risk represents a material impact that would affect system users or other key stakeholders
- Low – The risk does not represent a significant or material impact on the project's objectives, budget, or schedule.

Probability

- High – The risk is almost certain to occur (an 80 to 100 percent chance of occurring)
- Medium – The risk has approximately a 20 to 79 percent chance of occurring
- Low – The risk is unlikely to occur (19 percent or less chance of occurring).

7.1.4 Risk Response

When the priority of a given risk is determined to be a medium level, the CALPADS project management team will notify the "owner" of the associated risk area, who then will implement an appropriate planned response to the risk. The "owner" of the associated risk area will report the effectiveness of the planned response to the project manager to determine whether further action is necessary. This process will continue throughout the lifecycle of the project, with new risks added and resolved risks removed from the watch list.

7.1.5 Risk Avoidance

The project manager, with assistance of other project team members, will develop plans to avoid the occurrence of identified project risks. To avoid the risk, the CALPADS project manager would eliminate the risk cause and/or consequence (e.g., forgo certain functions of CALPADS or shut down CALPADS when risks are identified). Mitigation strategies also will be implemented to reduce the threat associated with specific risks by monitoring and managing causal factors.

7.1.6 Risk Acceptance

Risk acceptance (or risk assumption) is a conscious managerial decision to accept a certain degree of risk. The project management team will determine whether a given project risk is acceptable. This approach does nothing to prevent or mitigate a given risk, but rather prepares for and deals with the consequences of risks, should a risk event occur. The CDE will not expend risk management resources to deal with accepted risks. If necessary, the CALPADS project manager will obtain written approval from the CALPADS project sponsors to accept a given risk or set of risks.

7.1.7 Risk Mitigation

The CDE believes risk mitigation is vital from project conception through closeout. The CALPADS project management team will conduct regular risk assessment and mitigation sessions to increase the effectiveness of CDE's risk management approach. If a risk cannot be avoided or accepted, the CALPADS project management team will implement a strategy to mitigate key project risks. Mitigation strategies will include strategies and actions for reducing (or eliminating) the impact, probability, or both, for a given risk. In addition to risk avoidance and risk assumption that are discussed above, other mitigation strategies include risk limitation and risk transference. For each strategy, the CALPADS project manager will document actions, goals, dates, tracking requirements, and other supporting information needed to carry out the mitigation strategy.

7.2 Risk Management Worksheet

The CDE conducted a preliminary risk assessment for the CALPADS project to prepare a risk assessment worksheet that comprehends key project risks. This risk assessment is based on identification, analysis, quantification, and prioritization of key project risks. **Exhibit 7-1**, on the following pages, identifies the preliminary risks associated with the CALPADS project. As the CALPADS project continues, the CALPADS project manager will maintain a database of these and other risks for tracking, updating, and reporting.

Exhibit 7-1 CALPADS Risk Management Worksheet

Risk Category or Event	Prob	Im-pact	Affected Program Area	Preventive Strategies and Contingency Measures
Resources				
Error rate associated with the unique California School Information Services (CSIS) student ID creation is excessively high (>0.1 percent)	M	H	❑ Timely collection of accurate student demographic data ❑ Timing of API and AYP reporting ❑ Ability to compare data longitudinally	❑ Prepare memorandum of understanding (MOU) with clear service level agreement (SLA) ❑ Engage IPOC for CSIS ❑ Execute current method of data collection via assessment header sheets in parallel with CALPADS data collection process ❑ Request CSIS to investigate experience in other states to avoid problems
LEAs not acquiring and maintaining the CSIS student identifier	M	H	❑ Timely collection of accurate student demographic data ❑ Timing of API and AYP reporting ❑ Ability to compare data longitudinally	❑ Require the CSIS student identifier to be part of the official student record (cumulative file)
Department of Finance (DOF) reduces CDE proposed resource requirements for the project	H	H	❑ Project scope ❑ Project schedule	❑ Include DOF on CALPADS advisory board ❑ Request executive-level go / no-go decision
CDE does not commit internal technical staff to adequately support CALPADS	M	M	❑ Maintenance and operation of CALPADS	❑ Determine if available resources exist within TSD ❑ Reassess priorities ❑ Outsource maintenance and operation of CALPADS
CDE does not receive additional positions required to support the CALPADS project	H	H	❑ Project schedule ❑ Timely deployment of CALPADS	❑ Include DOF on CALPADS advisory board ❑ Reassess priorities

(continued on next page)

Exhibit 7-1 CALPADS Risk Management Worksheet *(continued)*

Risk Category or Event	Prob	Im-pact	Affected Program Area	Preventive Strategies and Contingency Measures
Resources *(continued)*				
Existing CDE program staff are resistant to change	M	H	❑ Program execution ❑ Appropriate system usage and adoption	❑ Apply proven transition management methodology to engage CDE program staff in the transition to CALPADS ❑ Target CALPADS early adopter programs first ❑ Redirect resistant CDE program personnel off of CALPADS development
Key CDE program and technical personnel are not sufficiently available during development	M	H	❑ Project schedule	❑ Clearly define roles and responsibilities for key CALPADS project team members ❑ Identify backup staff members ❑ Secure staff resource commitments through project sponsors ❑ Monitor what is competing for these staff resources ❑ Reimburse program staff costs via Title VI ❑ Request more resources
Schedule				
Local education agencies (LEAs) are unable to assign adequate resources to fulfill CALPADS data collection requirements	H	H	❑ Timely collection of clean student NCLB demographic and other data ❑ Timing of API and AYP reporting	❑ Propose to Finance funding of LEA resources for CALPADS data collection and submission ❑ Include Finance on CALPADS advisory board ❑ Train LEAs
Quality of LEA-supplied student demographic data is less than adequate	M	H	❑ Timely collection of clean student NCLB demographic and other data ❑ Timing of API and AYP reporting	❑ Propose to Finance to fund LEA resources required to support for CALPADS data collection and submission activities ❑ Train LEAs

(continued on next page)

Exhibit 7-1 CALPADS Risk Management Worksheet *(continued)*

Risk Category or Event	Prob	Im-pact	Affected Program Area	Preventive Strategies and Contingency Measures
Schedule *(continued)*				
Procurement processes are not completed within reasonable timeframes	H	H	❑ Timely deployment of CALPADS ❑ Compliance with NCLB reporting requirements	❑ Conservatively estimate the effort, duration, and costs associated with procurement activities (i.e., lengthen the time assumed to procure vendors)
Systems integrator does not provide deliverables within agreed-upon timeframes	M	H	❑ Project schedule	❑ Create and maintain positive working relationship with system integrator to proactively identify and mitigate schedule-related risks ❑ Establish economic incentives for system integrator to adhere to and / or accelerate agreed-upon timeframes ❑ Execute current methods of data collection and reporting
The CDE impacts vendor progress due to lengthy review process	M	M	❑ Timely deployment of CALPADS ❑ Compliance with NCLB reporting requirements	❑ Establish CDE deliverable review procedures that include specific timeframes to review deliverables ❑ Develop resolution process agreeable to CDE and the vendor ❑ Plan for vendor to proceed with project and receive payments when CDE takes longer than agreed-upon amount of time to review deliverables

(continued on next page)

Exhibit 7-1 CALPADS Risk Management Worksheet *(continued)*

Risk Category or Event	Prob	Im-pact	Affected Program Area	Preventive Strategies and Contingency Measures
Schedule *(continued)*				
LEA staff are resistant to change	H	H	❑ Timely collection of clean student demographic data ❑ Timing of API and AYP reporting	❑ Train LEAs; Communicate regularly with LEAs via CALPADS project newsletter ❑ Partner with LEAs to help create a data-driven culture among education administrators within the LEAs ❑ Execute current method of data collection via assessment header sheets in parallel with CALPADS data collection process ❑ Issue letters from State Superintendent of Public Instruction to District Superintendents reminding them of need to comply with SB 1453 requirements ❑ Provide LEAs with CDE's long-term vision of how CALPADS will help reduce other CDE data collections thereby reducing their reporting burden.
LEAs are unable to make transition to CALPADS or utilize CALPADS data for education decision making	H	H	❑ Timely deployment of CALPADS ❑ Appropriate system usage and adoption	❑ Fund CSIS to assist LEAs to transmit data to CDE and to use CALPADS information for educational decision making ❑ Fund LEAs to support their data activities related to the collection and utilization of CALPADS
Scope				
Business requirements change before CALPADS is implemented	H	H	❑ Project schedule and resource requirements	❑ Monitor legislation ❑ Involve internal and external stakeholders in development and review of requirements ❑ Submit special project report, if necessary

(continued on next page)

Exhibit 7-1 CALPADS Risk Management Worksheet *(continued)*

Risk Category or Event	Prob	Im-pact	Affected Program Area	Preventive Strategies and Contingency Measures
Stakeholders				
Stakeholder expectations regarding features and functions extend beyond No Child Left Behind Act of 2001 (NCLB) requirements	H	H	❑ Project scope, schedule, resources	❑ Involve internal and external stakeholders in development and review of requirements ❑ Formally ratify requirements with key stakeholders ❑ Clearly define what is in (and out) of scope ❑ Clarify what is meant when the CALPADS project management team states that this is not a data warehouse project ❑ Map requirements to CALPADS project business objectives
CALPADS scope and its impact on CSIS state reporting may raise confusion in data collection requirements with LEAs.	M	H	❑ Project scope and schedule ❑ Timely deployment of CALPADS	❑ Require relevant stakeholders (CDE, LAO, DOF, CSIS) to define role of CALPADS and CSIS.
Product				
Information technology evolves before CALPADS is implemented	M	H	❑ Project schedule and resource requirements	❑ Monitor emerging technology trends ❑ Make course corrections as early in the project lifecycle as possible ❑ Submit special project report, if necessary
Interface requirements change	M	H	❑ Project schedule and resource requirements	❑ Coordinate early and often with California Basic Educational Data System (CBEDS) and Consolidated Application “owners” regarding NCLB data collection requirements ❑ Coordinate with California Commission on Teacher Credentialing regarding highly qualified teacher data collection and reporting

(continued on next page)

Exhibit 7-1 CALPADS Risk Management Worksheet *(continued)*

Risk Category or Event	Prob	Im-pact	Affected Program Area	Preventive Strategies and Contingency Measures
Organization				
Project vision and direction change due to change in CDE administration	L	M	❑ Compliance with NCLB reporting requirements	❑ Broaden project sponsorship to include divisional representatives

7.3 Risk Tracking and Control

In addition to the sections just presented, the Department of Finance guidelines for the risk management section of an FSR also require a separate section on risk tracking and control.[2] Many of the topics in this section were presented previously, but are highlighted in this section.

Risk is inherent in any project. All projects have some degree of uncertainty due to the assumptions associated with them and the environment in which they are erected. Project risks cannot be eliminated entirely, but many of them can be anticipated and reduced.

The CDE will use a standard risk management approach, consisting of four phases, to manage the risks of this project. The approach includes:

- *Risk Identification*: determining early on which risks are likely to affect the project and documenting the characteristics of each.
- *Risk Assessment*: providing a process to immediately determine the probability and criticality of the identified risk, and assigning a value. High-risk values may require immediate action. Lower value risks may be given a "watch" status, which requires monitoring.
- *Risk Response Planning*: developing procedures and techniques to enhance opportunities and reduce threats to the project's objectives from risk.
- *Risk Response Implementation*: invoking the response plan for any risk that exceeds the acceptable level. The owner of the risk area takes the action and reports the effectiveness of the response to the project manager for evaluation of whether further action is necessary.

As described in Section 6 of this FSR, the independent project oversight contractor (IPOC) and the CALPADS project manager will act as the risk managers for this project. This is acceptable because of the relatively small size of the project. The CDE's internal Project Management Office will provide oversight of the risk management function.

The CALPADS project manager will conduct an initial risk management session involving the project participants after the project kickoff. Based on results of this session, additional project activities may be identified for the project plan. The selected systems integration vendor will conduct a complete risk assessment with the project manager and project participants. The CALPADS project manager will track and monitor results of this effort for the duration of the project. As risk events occur during the course of the project, the project manager will convene

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[2] California Department of Finance, *Feasibility Study Report Preparation Instructions*, September 2002, page 2, item 7.2.

one or more special risk management sessions, document the impact, and develop a mitigation strategy.

To track project risks, the CDE will develop a risk management database to track the project's risks, including a brief description, date identified, source, status, risk category, and probability of occurrence. The project manager, in conjunction with the independent project oversight contractor (IPOC), will routinely monitor and update this database as risks are identified, quantified, mitigated, and reported.

Every monthly progress report will include reference to the specific risks relevant to the period. If new risks are identified between weekly status meetings, the project manager will decide whether or not consideration of the risk can be safely deferred until the next meeting. If not, the project manager will convene a special risk management session to specifically address the new risk.

This process continues throughout the life of the project. New risks will be added and old risks will be removed from "watch" status as the project progresses.

To minimize project risks, the CDE will:

- Conduct a field test or pilot of CALPADS. This will include a selection of a representative sample of LEAs to submit student demographic and program participation data, transfer of this information to test vendors, and receipt of a sample of statewide assessment results from a test vendor selected for the field test. We will perform User Acceptance Test and possibly a pilot prior to implementation. This will help expose issues or problems before statewide rollout.
- Work with CDE's Project Management Office to determine whether:
  - Project plans are developed to common standards and procedures and are integrated into an overall project plan
  - Project progress reports are based on common standards and procedures
- Work with CDE's Technology Services Division to determine that the information technology architecture of the CALPADS application is integrated and expandable over time
- Work with CDE's Project Management Office to obtain an independent perspective on the project management and risk management activities of the project.

8 Economic Analysis Worksheets

This section presents the four economic analysis worksheets (EAWs) that the Department of Finance (DOF) requires in a feasibility study report (FSR). The EAWs present estimated personnel years (PYs) and costs for fiscal years 2005/06 through 2010/11. The California Department of Education (CDE) projects costs this far into the future because FY 2009/10 is the first full fiscal year in which annual recurring costs to operate and maintain CALPADS are expected to remain constant.

This section also presents assumptions made by the CDE to prepare the estimated PYs and costs presented in the EAWs. The CDE believes that providing these assumptions assists in the review of the EAWs.

As shown previously in the project management plan, the CDE will begin procurement for the California Longitudinal Pupil Achievement Data System (CALPADS) after the DOF approves the FSR. The CDE expects that CALPADS will be implemented in August 2008.

The worksheets present personnel years and cost estimates for existing systems and for the proposed alternative. The CDE based estimates for existing systems on current staffing and operating information and a cost analysis of local education agencies (LEAs) activities that would be impacted by the solution. Estimates for the proposed alternative involved a bottom up approach, as described below.

In order to estimate one-time costs for development and acquisition of the proposed alternative, the CDE first prepared a work breakdown structure (WBS) consisting of 15 major tasks and 100 subtasks across the life cycle of the project, including 13 months of full operation through December 31, 2008. The CDE then estimated the level of effort (i.e., number of days) for both state staff and vendor staff needed to complete each task and subtask. The CDE determined state staff personnel-years (PYs) by dividing the total estimated level of effort days by 221 (i.e., 221 days = 1 PY).

The CDE applied an assumed cost per state “staff day” to estimate state costs for the project. The CDE assumes that the cost for one State staff day is $396. This daily cost remains constant for the entire projection period. The daily cost includes salaries, wages, benefits, and training. The CDE based its estimate for the cost for a staff day on the estimated mix of existing CDE staff that currently support the NCLB reporting process. The CDE weighted the monthly salary of each personnel classification supporting NCLB by the number of PYs that CDE estimated for that classification. The CDE then applied a benefit factor to the weighted average monthly salary and determined the cost for one staff day.

Similarly, CDE applied an assumed daily cost of $1,367 per day for contractor time, including fees, State allowable per diem, and transportation costs, in order to determine total contractor costs. This daily cost remains constant for the entire projection period. The CDE based this estimate on assumptions made by CDE on the average hourly billing rate for the vendor team, the percent of time the vendor team will incur travel and lodging expenses, the rates now allowed by State guidelines for lodging and per diem, and assumed rates for transportation.

Estimated personnel years and staff costs displayed in the EAWs for each fiscal year are based on the proposed project scheduling presented earlier in Section 6 of this FSR. The CDE estimated what portion of each of the 100 WBS subtasks would be performed in each fiscal year. Many subtasks cross fiscal years. If the project schedule changes, and this schedule change is significant, then the timing of staffing levels and costs will change.

The EAWs required by the DOF are presented at the end of this section. The assumptions used to prepare each economic analysis worksheet are presented in the following subsections:

8.1. Existing System/Baseline Cost Worksheet

8.2. Proposed Alternative Cost Worksheet

8.3. Economic Analysis Summary Worksheet

8.4. Project Funding Plan Worksheet.

8.1 Existing System/Baseline Cost Worksheet

- **Continuing Information Technology Costs – Staff (Salaries and Benefits)**

  Approximately nine CDE information technology (IT) positions currently provide some level of IT services for Department applications that support NCLB reporting requirements. **Figure 8.1**, below, provides a roll-up of the personnel classifications for these positions, the monthly salary for each classification, and the estimated PYs for each classification.

Figure 8.1 Continuing Information Technology Support

Classification	Monthly Salary	PYs
Assistant Information Systems Analyst	$3,320	0.6
Associate Programmer Analyst (Specialist)	4,782	0.4
Information Systems Technician	2,670	0.4
Senior Information Systems Analyst (Spc)	5,767	0.1
Senior Information Systems Analyst (Sprv)	5,243	0.3
Staff Information Systems Analyst (Spc)	5,243	0.4
Total Personnel Years (PYs)		**2.2**

Direct wages are estimated at $109,987. The CDE assumes that fringe benefits are 31 percent of these direct wages. Total annual continuing costs for information technology staff are estimated at **$144,083.**

- **Continuing Information Technology Costs – Contract Services**

  The CDE does not contract for information technology services that support existing NCLB processes.

- **Continuing Information Technology Costs – Other**

  The CDE assumes that annual operating expense and equipment (OE&E) costs are $10,000 per PY. The CDE estimates annual existing information technology PYs at 2.2. Therefore, the CDE estimates annual OE&E costs for existing program staff at **$22,000**.

- **Continuing Program Costs – Staff**

  Approximately 38 CDE positions currently provide some level of support for collecting, maintaining, and reporting data necessary to support NCLB reporting requirements. These include employees in three of CDE's four branches. **Figure 8.2**, below, provides a roll-up of the personnel classifications for these positions, the monthly salary for each classification, and the estimated PYs for each classification.

Figure 8.2 Existing System/Baseline Personnel Support

Classification	Monthly Salary	PYs
Associate Governmental Program Analyst	$4,554	1.1
Career Executive Assignment I	7,744	0.1
Career Executive Assignment II	7,668	0.9
Education Administrator I	6,883	0.5
Education Programs Assistant	4,492	0.3
Education Programs Consultant	5,924	5.4
Education Research and Evaluation Administrator I	6,586	2.6
Education Research and Evaluation Consultant	5,924	11.1
Office Technician	2,732	1.6
Research Analyst II	4,782	1.0
Staff Services Analyst	3,158	0.2
Total Personnel Years (PYs)		**24.8**

Direct wages are estimated at $1,703,760. Fringe benefits are assumed to be 31 percent of these direct wages. Total annual continuing costs for program staff are estimated at **$2,231,926.**

- **Continuing Program Costs – Other**

The CDE determined three primary components of "other" continuing program costs: (1) CDE operating expense and equipment, (2) LEA activities that will be directly impacted by CALPADS, and (3) test vendor activities that will be directly impacted by CALPADS. Each of these is discussed below. The CDE provides total costs for all three in this single line item of the EAW.

The CDE assumes that annual operating expense and equipment (OE&E) costs are $10,000 per PY. The CDE estimates annual existing program PYs at 24.8. Therefore, the CDE estimates annual OE&E costs for existing program staff at $248,000.

The Department of Finance's Technology Investment Review Unit (TIRU) requested that the CDE include the cost of LEAs in the EAWs. To do so, the CDE identified three of the major existing LEA activities that will be directly impacted by CALPADS, and then worked with LEAs to estimate costs for these activities. These activities, and CDE's estimate of annual LEA costs statewide for each, are as follows:

❑ Collect, maintain, extract (from local student information systems), review, correct, prepare, and submit student information required on Standardized Testing and Reporting (STAR) program assessment header sheets to the test vendor in advance of the test. The test vendor then generates bar-coded answer documents and/or bar coded labels for the STAR statewide assessments that contain the student information submitted by LEAs. This process is known as the "pre-ID" process. These assessments are used by the CDE to comply with NCLB, Title I reporting requirements for adequate yearly progress (AYP).	$10,000,000
❑ Collect, maintain, extract (from local human resources information systems), review, correct, prepare, and submit the professional assignment information form (PAIF) to the CDE. This form will be used by CDE to comply with NCLB, Title II reporting requirements for high quality teachers.	$8,500,000
❑ Collect, maintain, extract (from local student information systems), review, correct, prepare, and submit student information required on California English Language Development Test (CELDT) header sheets to the test vendor in advance of the test. The test vendor then generates bar-coded answer documents and/or bar coded labels for the CELDT statewide assessments that contain the student information submitted by LEAs. This process is known as the "pre-ID" process. These assessments are used by the CDE to comply with NCLB, Title III reporting requirements for English language learners.	$1,800,000
Total LEA Costs	**$20,300,000**

Test vendors that contract with the CDE to administer statewide assessments perform four activities that will be directly impacted by CALPADS:

- Collect student-level data required to generate bar-coded answer documents and/or bar coded labels for the STAR and CELDT statewide assessments that contain student information submitted by LEAs
- Merge student test results with student demographic and program participation data collected separately from LEAs, create a file of student test records, and submit these files to the CDE
- Prepare various reports to allow LEAs and the CDE to review the quality of the student test records
- Provide Internet browser-based capability that allows LEAs to review and edit individual student demographic and program participation data elements.

The CDE reviewed STAR, California High School Exit Examination (CAHSEE), and CELDT test vendor contracts to determine the scope of work and contract amount for each of these four activities. Based on this review, the CDE estimates total annual test vendor contract costs for these four activities at $39,948,049.

Adding together OE&E, LEA, and test vendor costs for purposes of the EAW, the CDE estimates annual "other" continuing program costs at **$60,496,049**.

8.2 Proposed Alternative Cost Worksheet

- **One-Time IT Project Costs – Staff (Salaries and Benefits)**

  The CDE estimated the level of state staff effort (days) for each of 15 development/deployment tasks and 100 subtasks. These estimates assume that vendors will be procured for project management, solicitation document development, independent project oversight, business process improvement, and systems integration services.

  The CDE converted these estimated State staff days to personnel years (PYs), assuming 221 days per year per PY. The CDE distributed total state staff days across four fiscal years based upon assumptions made about when major procurement, project development, and project deployment steps take place. The proposed project schedule is provided in Section 6.5 of this FSR.

  The CDE applied an assumed cost per state "staff day" in order to estimate total state costs for the project. The CDE assumes that the cost for one State staff day is $396 for the duration of the project time frame. This daily cost, multiplied by the estimated state staff days during each fiscal year, provides the cost estimate for each fiscal year. The CDE estimates 14.1 PYs of one-time state staff through the first three months of fiscal year 2008/09. Total one-time staff costs are estimated at **$1,242,255.**

- **One-Time IT Project Costs – Hardware Purchase**

  The CDE will house CALPADS at the Stephen P. Teale Data Center (Teale). Teale provided the CDE with an estimate of one-time and recurring Teale charges to purchase and host the system. These Teale charges include the purchase of hardware and are reflected in another line of this EAW ("Data Center Services"). Therefore, the CDE leaves the "Hardware Purchase" line of the EAW blank.

- **One-Time IT Project Costs – Software Purchase/License**

  As noted in the prior hardware purchase paragraph, Teale will purchase required operating and support software for CALPADS. Teale charges include the purchase of software and are reflected in another line of this EAW ("Data Center Services"). Therefore, the CDE assumes no one-time costs for Teale purchased software in the "Software Purchase/License" line of the EAW.

  The CDE assumes that additional software tools will be needed by CDE administrators and targeted CDE end-users. These tools include ad hoc query/reporting and online analytical processing. The CDE assumes that the one-time costs for these tools will be **$304,600**.

- **One-Time IT Project Costs – Contract Services**

  The CDE determined that it will enter into the following five contracts:

  - Project management
  - Solicitation document development
  - Independent project oversight
  - Business process improvement
  - Systems integration services.

  The CDE developed estimates for each of these five contract services. Assumptions made to prepare these estimates are presented below. Although summary form provided in Section 2 of this FSR allows the CDE to display the costs for each of these five contracts, this EAW does not allow the CDE to display each one separately. Therefore, the CDE discusses each vendor contract in the same order and grouping as required on the EAW:

  - Systems Integration ("Software Customization") – As described in the first two pages of this section, the CDE developed a detailed work breakdown structure of more than 100 activities, and estimated for each the level of effort (as number of days) that a contractor would need to complete each task. Based on these estimates and an assumed daily cost of $1,367 for a contractor, total software customization costs are estimated at **$5.2 million** through the end of fiscal year 2008/09.

- Project Management – The CDE estimates the development project will span 39 months, and that a contractor would expend and average of approximately 3.2 days per week on project management activities. The cost per day for the project management contractor is estimated at $1,367, as described earlier in this section. Total project management costs during the time period shown in the EAWs are estimated at **$735,227** through the end of fiscal year 2008/09. Costs incurred for project management activities that the CDE incurred prior to July 1, 2005, are not shown in the EAWs.
- Independent Project Oversight – The CDE estimates that the independent project oversight contractor will expend ten percent of the time on the project that the systems integration contractor expends. The cost per day for the project oversight contractor is estimated at $1,367, as described earlier in this section. Total project oversight costs are estimated at **$518,094** through the end of fiscal year 2008/09.
- Other Contract Services. The CDE estimates the total costs for other contract services at **$609,683**. These include the following three services:
  - Solicitation Document Development – The CDE estimates that costs for a vendor to develop the CALPADS request for proposal (RFP) and assist with evaluation and selection of the systems integrator will be **$472, 983**.
  - Business Process Improvement – The CDE estimates that costs for a vendor to assist with evaluating and improving NCLB related processes impacted by CALPADS will be **$136,700**.

Total one-time costs for the six contract services identified above are estimated at **$7.0 million** through the end of fiscal year 2008/09

- **One-Time IT Project Costs – Data Center Services**

The CDE assumes that Teale Data Center will assist in procuring required hardware and operating system software for CALPADS. The CDE worked with Teale to identify and confirm the scope and requirements for data center services. The requirements include a development environment of four servers, a production environment of 11 servers, and required storage area network capacity, network components, and digital certificate administration. The CDE estimates that one-time Teale charges at **$828,597**.

- **One-Time IT Project Costs – Other**

The CDE estimates that operating expense and equipment (OE&E) costs are $10,000 per PY. Total one-time IT project staff PYs are estimated at 14.2. Therefore, the CDE estimates OE&E costs for one-time IT project staff at **$142,000**.

- **Continuing IT Project Costs – Staff (Salaries and Benefits)**

The CDE plans to contract for operations and maintenance of CALPADS. However, the CDE will need one additional, full-time position (1 PY) for on-going CALPADS support. This new position's responsibilities includes business rules updates, definition of new business requirements, liaison with the vendor selected to operate and maintain CALPADS, technical planning, program coordination, and administration. The CDE

believes that a Senior Programmer Analyst – Specialist (SPA) would be the appropriate classification for this new position.

In addition to this SPA position, the CDE estimates it will need 4.3 additional PYs as follows:

- Two full-time associate governmental program analysts to provide first level CALPADS help desk support.
- One full-time education programs consultant, one full-time office technician, and one-quarter PY of a staff counsel. These personnel will be responsible for qualifying researchers who request access to CALPADS data, reviewing the purpose of each qualified researcher's request for CALPADS data, tracking each request in accordance with Federal Education Rights and Privacy Act (FERPA) and state privacy requirements, constructing the data set requested, and transmitting the data set to the researcher. These personnel will also review and respond to all California Public Records Act requests.

The other continuing CDE ("continuing IT project") cost will be for preparing the post implementation evaluation report (PIER), a document required by the Department of Finance. The CDE estimates 108 days of state personnel time, or approximately 0.5 PY, will be needed to prepare the PIER, at the same $396 assumed earlier in this section for each state day to develop CALPADS. The CDE also assumes $5,000 to account for OE&E costs for this 0.5 PY.

The CDE assumes that the first full month of CALPADS production will be September 2008. Therefore, the first full fiscal year of production is 2009/10. The CDE estimates total continuing IT project costs during fiscal year 2009/10 as follow:

- **$384,068** for recurring annual costs to maintain and operate CALPADS, and to support the CALPADS Service Unit
- $55,500 to prepare the PIER.

- **Continuing IT Project Costs – Hardware Lease/Maintenance**

The CDE intends to contract with Teale Data Center to procure and house the hardware required to support CALPADS. Teale billing rates and monthly charges include the cost to support the hardware. Therefore, the CDE did not include annual hardware maintenance/licenses costs in these EAWs.

- **Continuing IT Project Costs – Software Maintenance/Licenses**

The CDE intends to contract with Teale Data Center to procure and maintain the software required to support CALPADS. Teale billing rates and monthly charges include the cost to maintain the software, and are displayed on a separate line item of the EAWs. Therefore, the CDE did not include annual Teals Data Center software maintenance/ licenses costs on this line item of the EAW.

The CDE did include in this line item the estimated annual maintenance costs for additional software tools will be needed by CDE administrators and targeted CDE end-users. These tools include ad hoc query/reporting and online analytical processing. The CDE assumes that annually recurring costs for these tools will be **$76,150**.

- **Continuing IT Project Costs – Contract Services**

  The CDE will contract for operations and maintenance of the CALPADS application. The CDE identified the types of services required to support CALPADS, which include second and third level help desk support, system and application support, and database administration. The CDE identified the personnel class most appropriate to provide these resources and the full-time equivalents required by each personnel class. The CDE converted total estimated FTEs to work days, and then applied the daily cost of $1,367 for a contractor. Based on these assumptions, the CDE estimates annual contract services costs to operate and maintain CALPADS at **$1,213,896**. Costs assumed during FY 2008/09 assume that the system's first full month of production is September 2008.

- **Continuing IT Project Costs – Data Center Services**

  The CDE intends to house CALPADS hardware, software, and data at Teale. Teale provided a quote for servicing CALPADS servers, based on specifications for the system provided by the CDE. The CDE estimates that annual Teale charges to support hardware, software, and network components at **$966,840**. Costs assumed during FY 2008/09 assume that the system's first full month of production is September 2008.

- **Continuing IT Project Costs – Other**

  The CDE estimates that operating expense and equipment (OE&E) costs are $10,000 per PY. Continuing IT PYs are displayed on the "Staff (Salaries & Benefits)" row of the EAW. Therefore, the CDE estimates total OE&E costs for continuing IT project staff each fiscal year are based on the assumed PYs each fiscal year.

- **Continuing Existing IT Costs – Information Technology Staff**

  The CDE assumes that continuing existing IT staff PYs will include the same 2.2 PYs of existing IT staff PYs and associated costs. Therefore, the CDE estimates total costs for continuing existing IT project staff at **$144,083**.

- **Continuing Existing IT Costs – Other IT Costs**

  The CDE estimates that operating expense and equipment (OE&E) costs are $10,000 per PY. Total continuing existing IT staff PYs are estimated at 2.2. Therefore, the CDE estimates OE&E costs for continuing existing IT staff at **$22,000**.

- **Continuing Existing Program Costs – Program Staff**

  The CDE assumes that the continuing existing program staff PYs will include the same 24.8 program staff PYs and associated costs estimated for existing program staff. Assuming the same wages and benefits costs for each classification presented earlier in subsection 8.1, the CDE estimates total costs for continuing existing program staff at **$2,231,926**.

- **Continuing Existing Program Costs – Other Program Costs**

  The CDE determined three primary components of "other" continuing program costs: (1) CDE operating expense and equipment, (2) LEA activities that will be directly impacted by CALPADS, and (3) test vendor activities that will be directly impacted by CALPADS. Each of these is discussed below.

  The CDE estimates that operating expense and equipment (OE&E) costs are $10,000 per PY. The CDE estimates 29.1 PYs for continuing existing program staff. Therefore, the CDE estimates OE&E costs for continuing existing program staff at $291,000.

  The CDE assumes that continuing existing LEA program costs will not change from existing LEA program costs. LEAs currently provide student demographic and program participation data to test vendors, and these data are required to be accurate and up-to-date. LEAs will provide the same accurate and up-to-date student demographic and program participation data to CALPADS rather than to test vendors. LEAs currently complete and submit to CDE (or to CSIS, in the case of approximately 200 LEAs) a professional assignment information form (PAIF) for each teacher. LEAs will provide the same form to CDE, and the information on the PAIF will be captured by CALPADS. Therefore, total continuing existing LEA program costs are unchanged at $20.3 million.

  The business process change brought on by CALPADS requires a standardized data collection processes. These changes may result in shifting costs of data collection from program areas to data management or information technology areas.

  The CDE assumes that continuing annual test vendor costs will be 10 percent less than existing annual test vendor costs. Instead of submitting student demographic and program participation data to test vendors (during the "pre-ID" process), LEAs will submit this same information to CALPADS. This relieves test vendors from performing this activity. Also, test vendors would be relieved from having to provide LEAs with the ability to review and update student demographic and program participation data. This function will be provided by CALPADS. Because the CDE does not yet have current test vendor costs, the CDE does not yet include projected annual continuing test vendor costs.

  Adding together OE&E, LEA, and test vendor costs for purposes of the EAW, the CDE estimates annual "other" continuing existing program costs at **$56.5 million**.

The CDE did not include any costs associated with on-going CSIS technical assistance to LEAs to support their data submission processes to the CDE and promote the use of CALPADS. The CDE assumes current CSIS operations funding will continue.

8.3 Economic Analysis Summary Worksheet

This worksheet is a summary of the existing system/baseline cost worksheet and the proposed alternative worksheet. No new assumptions are made for this worksheet.

8.4 Project Funding Plan Worksheet

The CDE will redirect 1.5 positions to support the one-time and on-going costs. Additional funding will be needed to fund all other one-time and incremental annual continuing costs.

Exhibit 8-1 Existing System/Baseline Cost Worksheet

EXISTING SYSTEM/BASELINE COST WORKSHEET

All costs to be shown in whole (unrounded) dollars.

Department: Education

Project: California Longitudinal Pupil Achievement Data System (CALPADS)

Date Prepared: 04/06/2005

	FY 2005/06		FY 2006/07		FY 2007/08		FY 2008/09		FY 2009/10		FY 2010/11		SUBTOTAL	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
Continuing Information Technology Costs														
Staff (salaries & benefits)	2.2	144,083	2.2	144,083	2.2	144,083	2.2	144,083	2.2	144,083	2.2	144,083	**13.2**	**864,498**
Hardware Lease/Maintenance														**0**
Software Maintenance/Licenses		0		0		0		0		0		0		**0**
Contract Services		0		0		0		0		0		0		**0**
Data Center Services		0		0		0		0		0		0		**0**
Agency Facilities		0		0		0		0		0		0		**0**
Other		22,000		22,000		22,000		22,000		22,000		22,000		**132,000**
Total IT Costs	**2.2**	**166,083**	**2.2**	**166,083**	**2.2**	**166,083**	**2.2**	**166,083**	**2.2**	**166,083**	**2.2**	**166,083**	**13.2**	**996,498**
Continuing Program Costs:														
Staff	24.8	2,231,926	24.8	2,231,926	24.8	2,231,926	24.8	2,231,926	24.8	2,231,926	24.8	2,231,926	**148.8**	**13,391,556**
Other		60,496,049		60,496,049		60,496,049		60,496,049		60,496,049		248,000		**302,728,245**
Total Program Costs	**24.8**	**62,727,975**	**24.8**	**62,727,975**	**24.8**	**62,727,975**	**24.8**	**62,727,975**	**24.8**	**62,727,975**	**24.8**	**2,479,926**	**148.8**	**316,119,801**
TOTAL EXISTING SYSTEM COSTS	**27.0**	**62,894,058**	**27.0**	**62,894,058**	**27.0**	**62,894,058**	**27.0**	**62,894,058**	**27.0**	**62,894,058**	**27.0**	**2,646,009**	**162.0**	**317,116,299**

Exhibit 8-2 Proposed Alternative Cost Worksheet

PROPOSED ALTERNATIVE: Custom Data Collection and Repository

Date Prepared: 04/22/2005

Department: Education

Project: California Longitudinal Pupil Achievement Data System (CALPADS)

All Costs Should be shown in whole (unrounded) dollars.

	FY 2005/06		FY 2006/07		FY 2007/08		FY 2008/09		FY 2009/10		FY 2010/11		SUBTOTAL	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
One-Time IT Project Costs														
Staff (Salaries & Benefits)	0.5	40,392	3.9	342,577	9.4	823,697	0.4	35,589	0.0	0	0.0	0	14.2	1,242,255
Hardware Purchase		0		0		0		0		0		0		0
Software Purchase/License		0		304,600		0		0		0		0		304,600
Telecommunications														0
Contract Services														
Software Customization		0		652,708		4,327,758		193,624		0		0		5,174,090
Project Management		205,864		235,273		242,625		51,466		0		0		735,228
Project Oversight		31,086		98,438		290,132		98,438		0		0		518,094
IV&V Services		0		0		0		0		0		0		0
Other Contract Services		306,892		166,091		136,700		0		0		0		609,683
TOTAL Contract Services		543,842		1,152,510		4,997,215		343,528		0		0		7,037,095
Data Center Services				0		828,597		0		0		0		828,597
Agency Facilities						0								0
Other		5,000		39,000		94,000		4,000		0		0		142,000
Total One-time IT Costs	**0.5**	**589,234**	**3.9**	**1,838,687**	**9.4**	**6,743,509**	**0.4**	**383,117**	**0.0**	**0**	**0.0**	**0**	**14.2**	**9,554,547**
Continuing IT Project Costs														
Staff (Salaries & Benefits)	0.0	0	0.0	0	0.0	0	2.6	187,093	5.9	433,568	5.3	384,068	13.8	1,004,729
Hardware Lease/Maintenance		0		0		0		0		0		0		0
Software Maintenance/Licenses		0		0		0		76,150		76,150		76,150		228,450
Telecommunications		0		0		0		0		0		0		0
Contract Services		0		0		0		1,011,580		1,213,896		1,213,896		3,439,372
Data Center Services		0		0		0		805,700		966,840		966,840		2,739,380
Agency Facilities		0		0		0		0		0		0		0
Other		0		0		0		26,000		59,000		53,000		138,000
Total Continuing IT Costs	**0.0**	**0**	**0.0**	**0**	**0.0**	**0**	**2.6**	**2,106,523**	**5.9**	**2,749,454**	**5.3**	**2,693,954**	**13.8**	**7,549,931**
Total Project Costs	**0.5**	**589,234**	**3.9**	**1,838,687**	**9.4**	**6,743,509**	**3.0**	**2,489,640**	**5.9**	**2,749,454**	**5.3**	**2,693,954**	**28.0**	**17,104,478**
Continuing Existing Costs														
Information Technology Staff	2.2	144,083	2.2	144,083	2.2	144,083	2.2	144,083	2.2	144,083	2.2	144,083	13.2	864,498
Other IT Costs		22,000		22,000		22,000		22,000		22,000		22,000		132,000
Total Continuing Existing IT Costs	**2.2**	**166,083**	**2.2**	**166,083**	**2.2**	**166,083**	**2.2**	**166,083**	**2.2**	**166,083**	**2.2**	**166,083**	**13.2**	**996,498**
Program Staff	24.8	2,231,926	24.8	2,231,926	24.8	2,231,926	24.8	2,231,926	24.8	2,231,926	24.8	2,231,926	148.8	13,391,556
Other Program Costs		60,496,049		60,496,049		60,496,049		58,498,646		56,501,244		56,501,244		352,989,281
Total Continuing Existing Program Costs	**24.8**	**62,727,975**	**24.8**	**62,727,975**	**24.8**	**62,727,975**	**24.8**	**60,730,572**	**24.8**	**58,733,170**	**24.8**	**58,733,170**	**148.8**	**366,380,837**
Total Continuing Existing Costs	**27.0**	**62,894,058**	**27.0**	**62,894,058**	**27.0**	**62,894,058**	**27.0**	**60,896,655**	**27.0**	**58,899,253**	**27.0**	**58,899,253**	**162.0**	**367,377,335**
TOTAL ALTERNATIVE COSTS	**27.5**	**63,483,292**	**30.9**	**64,732,745**	**36.4**	**69,637,567**	**30.0**	**63,386,295**	**32.9**	**61,648,707**	**32.3**	**61,593,207**	**190.0**	**384,481,813**
INCREASED REVENUES		0		0		0		0		0		0		**0**

Exhibit 8-3 Economic Analysis Summary Worksheet

ECONOMIC ANALYSIS SUMMARY

Date Prepared: 04/22/2005

Department: Education

All costs to be shown in whole (unrounded) dollars.

Project: California Longitudinal Pupil Achievement Data System (CALPADS)

	FY 2005/06		FY 2006/07		FY 2007/08		FY 2008/09		FY 2009/10		FY 2010/11		SUBTOTAL	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
EXISTING SYSTEM														
Total IT Costs	2.2	166,083	2.2	166,083	2.2	166,083	2.2	166,083	2.2	166,083	2.2	166,083	13.2	996,498
Total Program Costs	24.8	62,727,975	24.8	62,727,975	24.8	62,727,975	24.8	62,727,975	24.8	62,727,975	24.8	2,479,926	148.8	316,119,801
Total Existing System Costs	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	2,646,009	162.0	317,116,299
PROPOSED ALTERNATIVE														
Custom Data Collection and Repository														
Total Project Costs	0.5	589,234	3.9	1,838,687	9.4	6,743,509	3.0	2,489,640	5.9	2,749,454	5.3	2,693,954	28.0	17,104,478
Total Cont. Exist. Costs	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	60,896,655	27.0	58,899,253	27.0	58,899,253	162.0	367,377,335
Total Alternative Costs	27.5	63,483,292	30.9	64,732,745	36.4	69,637,567	30.0	63,386,295	32.9	61,648,707	32.3	61,593,207	190.0	384,481,813
COST SAVINGS/AVOIDANCES	(0.5)	(589,234)	(3.9)	(1,838,687)	(9.4)	(6,743,509)	(3.0)	(492,237)	(5.9)	1,245,351	(5.3)	(58,947,198)	(28.0)	(67,365,514)
Increased Revenues		0		0		0		0		0		0		0
Net (Cost) or Benefit	(0.5)	(589,234)	(3.9)	(1,838,687)	(9.4)	(6,743,509)	(3.0)	(492,237)	(5.9)	1,245,351	(5.3)	(58,947,198)	(28.0)	(67,365,514)
Cum. Net (Cost) or Benefit	(0.5)	(589,234)	(4.4)	(2,427,921)	(13.8)	(9,171,430)	(16.8)	(9,663,667)	(22.7)	(8,418,316)	(28.0)	(67,365,514)		
ALTERNATIVE #1														
Total Project Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Total Cont. Exist. Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Total Alternative Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
COST SAVINGS/AVOIDANCES	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	2,646,009	162.0	317,116,299
Increased Revenues		0		0		0		0		0		0		0
Net (Cost) or Benefit	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	2,646,009	162.0	317,116,299
Cum. Net (Cost) or Benefit	27.0	62,894,058	54.0	125,788,116	81.0	188,682,174	108.0	251,576,232	135.0	314,470,290	162.0	317,116,299		
ALTERNATIVE #2														
Total Project Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Total Cont. Exist. Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Total Alternative Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
COST SAVINGS/AVOIDANCES	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	2,646,009	162.0	317,116,299
Increased Revenues		0		0		0		0		0		0		0
Net (Cost) or Benefit	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	62,894,058	27.0	2,646,009	162.0	317,116,299
Cum. Net (Cost) or Benefit	27.0	62,894,058	54.0	125,788,116	81.0	188,682,174	108.0	251,576,232	135.0	314,470,290	162.0	317,116,299		

Exhibit 8-4 Project Funding Plan Worksheet

PROJECT FUNDING PLAN

Department: Education

All Costs to be in whole (unrounded) dollars

Date Prepared: 04/22/2005

Project: California Longitudinal Pupil Achievement Data System (CALPADS)

	FY 2005/06		FY 2006/07		FY 2007/08		FY 2008/09		FY 2009/10		FY 2010/11		SUBTOTALS	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
TOTAL PROJECT COSTS	**0.5**	**589,234**	**3.9**	**1,838,687**	**9.4**	**6,743,509**	**3.0**	**2,489,640**	**5.9**	**2,749,454**	**5.3**	**2,693,954**	**28.0**	**17,104,478**
RESOURCES TO BE REDIRECTED														
Staff	0.4	438,161	1.5	149,384	1.5	149,384	1.5	149,384	1.5	149,384	1.5	149,384	**7.9**	**1,185,081**
Funds:														
Existing System		0		0		0		0		0		0		**0**
Other Fund Sources		0		0		0		0		0		0		**0**
TOTAL REDIRECTED RESOURCES	**0.4**	**438,161**	**1.5**	**149,384**	**1.5**	**149,384**	**1.5**	**149,384**	**1.5**	**149,384**	**1.5**	**149,384**	**7.9**	**1,185,081**
ADDITIONAL PROJECT FUNDING NEEDED														
One-Time Project Costs	0.1	151,073	2.4	1,689,303	7.9	6,594,125	(1.1)	233,733	(1.5)	(149,384)	(1.5)	(149,384)	**6.3**	**8,369,466**
Continuing Project Costs	0.0	0	0.0	0	0.0	0	2.6	2,106,523	5.9	2,749,454	5.3	2,693,954	**13.8**	**7,549,931**
TOTAL ADDITIONAL PROJECT FUNDS NEEDED BY FISCAL YEAR	**0.1**	**151,073**	**2.4**	**1,689,303**	**7.9**	**6,594,125**	**1.5**	**2,340,256**	**4.4**	**2,600,070**	3.8	2,544,570	**20.1**	**15,919,397**
TOTAL PROJECT FUNDING	**0.5**	**589,234**	**3.9**	**1,838,687**	**9.4**	**6,743,509**	**3.0**	**2,489,640**	**5.9**	**2,749,454**	**5.3**	**2,693,954**	**28.0**	**17,104,478**
Difference: Funding - Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	**0.0**	**0**

Total Estimated Cost Savings	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	**0.0**	**0**

Exhibit 8-4 Project Funding Plan Worksheet

ADJUSTMENTS, SAVINGS AND REVENUES WORKSHEET
(DOF Use Only)

Department: Education
Project: California Longitudinal Pupil Achievement Data System (CALPADS)

Date Prepared: 04/22/2005

Annual Project Adjustments	FY 2005/06		FY 2006/07		FY 2007/08		FY 2008/09		FY 2009/10		FY 2010/11	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
One-time Costs												
Previous Year's Baseline	0.0	0	0.1	151,073	2.4	1,689,303	7.9	6,594,125	(1.1)	233,733	(1.5)	(149,384)
(A) Annual Augmentation /(Reduction)	**0.1**	**151,073**	**2.3**	**1,538,230**	**5.5**	**4,904,822**	**(9.0)**	**(6,360,392)**	**(0.4)**	**(383,117)**	**0.0**	**0**
(B) Total One-Time Budget Actions	0.1	151,073	2.4	1,689,303	7.9	6,594,125	(1.1)	233,733	(1.5)	(149,384)	(1.5)	(149,384)
Continuing Costs												
Previous Year's Baseline	0.0	0	0.0	0	0.0	0	0.0	0	2.6	2,106,523	5.9	2,749,454
(C) Annual Augmentation /(Reduction)	**0.0**	**0**	**0.0**	**0**	**0.0**	**0**	**2.6**	**2,106,523**	**3.3**	**642,931**	**(0.6)**	**(55,500)**
(D) Total Continuing Budget Actions	0.0	0	0.0	0	0.0	0	2.6	2,106,523	5.9	2,749,454	5.3	2,693,954
Total Annual Project Budget Augmentation /(Reduction) [A + C]	**0.1**	**151,073**	**2.3**	**1,538,230**	**5.5**	**4,904,822**	**(6.4)**	**(4,253,869)**	**2.9**	**259,814**	**(0.6)**	**(55,500)**

[A, C] Excludes Redirected Resources

Total Additional Project Funds Needed [B + D]

Annual Savings/Revenue Adjustments

Cost Savings	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Increased Program Revenues		0		0		0		0		0		0

Appendix A

NCLB Reporting Requirements

One goal established for the California Longitudinal Pupil Achievement Data System (CALPADS) by Senate Bill 1453 is "t*o provide school districts and the State Department of Education access to data necessary to comply with federal reporting requirements delineated in the No Child Left Behind Act of 2001 (P.L. 107-110).*" This appendix identifies data needed within CALPADS to comply with NCLB reporting requirements.

California's NCLB reporting requirements primarily stem from California's adopted performance goals and indicators. California adopted five performance goals, and 12 performance indicators. These goals and indicators can be found in California's *Consolidated State Application for No Child Left Behind* (June 12, 2002), under "California's NCLB Performance Goals and Performance Indicators" (pages 11-13). This document can be found on the California Department of Education's web site (www.cde.ca.gov), under No Child Left Behind.

This appendix provides a summary of major reporting requirements under NCLB, organized by the relevant Title or programs. This appendix identifies primary types of data needed for NCLB reporting, thereby identifying data that must be collected and maintained in the California longitudinal pupil achievement data system. This appendix also identifies how data required to meet these reporting requirements currently are being collected through existing data collection activities.

Throughout this appendix, individual data elements required to meet NCLB reporting requirements are displayed in italicized text, as shown in this example:

- *English proficiency status.*

In addition to data elements required for NCLB reporting, the CDE identified two additional data elements that are needed to support the data system required by SB 1453:

- *A unique student identifier. A unique ID is needed to match records of individual students from one test administration to the next as the student progresses through California public schools (longitudinal data). This data element also helps meet two NCLB requirements: keep track of continuous enrollment at the same school and district*

between fall and spring, and to monitor which students are absent or exempt from testing.

- *Institution identifier, which is the "CDS" number or county-district – school number. This data element is needed to compile NCLB required reports for student achievement by district and by school.*

Appendix B to this feasibility study report provides a summary list of required data elements identified in Appendix A.

The remainder of this appendix is organized by NCLB titles, as follows:

A.1. Title I: Part A: Improving Basic Programs Operated by LEAs

A.2. Title II: Preparing, Training, and Recruiting High Quality Teachers and Principals

A.3. Title III: Part A: English Language Acquisition, Language Enhancement, and Academic Achievement Act

A.4. Title IV: Part A: Safe and Drug-Free Schools and Communities.

A.5. Title IX: General Provisions.

A.1 Title I: Part A: Improving Basic Programs Operated by LEAs

The NCLB Act primarily holds schools accountable by requiring them to make "Adequate Yearly Progress" (AYP). To make AYP in California, schools and districts must meet standards established for each of the following four criteria:

- English language arts and math achievement, overall and for each significant subgroup
- Assessment participation rate, overall and for each significant subgroup
- Academic performance index (API) progress
- High school graduation rate.

In reporting on AYP, schools meet the reporting requirements for a number of California performance goals and indicators, including:

- Performance Goal 1: Indicators 1.1, 1.2, 1.3
- Performance Goal 2: Indicators 2.2, 2.3
- Performance Goal 5: Indicator 5.1.

Finally, Senate Bill 1453 requires that local education agencies (LEAs) maintain test results at the "subscore" level. The bill does not define "subscore." The CDE has defined subscore for purposes of the CALPADS project, and these definitions are noted in the subsections that follow.

The four subsections that follow describe the data elements needed to measure each of the four criteria that schools must meet to make AYP**. Appendix C** to this feasibility study report provides a summary of the scores and subscores for each assessment that will be maintained in CALPADS.

A.1.1 English Language Arts and Math Achievement

The percentage of public school students at proficient or above on the California Standards Tests (CSTs) in English Language Arts (ELA) and math, the California Alternate Performance Assessment (CAPA), and the California High School Exit Examination (CAHSEE), must meet state-determined Annual Measurable Objectives (AMOs) each year. To determine whether schools are meeting AMOs, the CDE will need:

- *Each test taker's performance level and scale score for the CST in English language arts and math, grades 2 – 8*
- *Each test taker's performance level and scale score for the CAPA in English language arts and math, grades 2 – 8, and 10*
- *Each test taker's score for the CAHSEE in English language arts and math, grade 10. For SB 1453, the CDE also needs the 11 ELA subgroup scores and the 10 math subgroup scores, both number and percent correct.*

The percentage of students in numerically significant subgroups (as specified) at proficient or above on the CSTs, CAPA, and CAHSEE, must meet annual AMOs. To determine whether numerically significant subgroups of these students are meeting AMOs, for each student the CDE must know:

- *Grade level*
- *Gender*
- *Race/Ethnicity*
- *Disability status*
- *English proficiency status. This subgroup includes English Learners and Redesignated-Fluent English Proficient (R-FEP) students. R-FEP students will continue to be included only until they have attained the proficient or above level on the ELA CST for three years.*
- *Economically disadvantage status. Economically disadvantage status determined based on participation in the National School Lunch Program and/or parent education level.*
- *Migrant status*
- *District of residence if different than district of service (for special education students).*

Students included in the calculation are those that have been enrolled in the same school or district since the fall. To determine this, the CDE must know:

- *Whether the student has been continuously enrolled in the school since the last California Basic Education System (CBEDS) data collection*
- *Whether the student has been continuously enrolled in the district since the fall the last CBEDS data collection.*

Currently, all of these data are recorded on the statewide assessment header sheets and answer documents. The test vendors then provide student test result files to CDE that include these data elements.

A.1.2 Assessment Participation Rate

For each statewide assessment used for AYP, 95 percent of students in the assessed grades enrolled on the first day of testing must take the assessment. To determine this, the CDE must know:

- *Number of students in grades 2 – 8, and 10, enrolled on the first day of testing*
- *Number of students in grades 2 –8 taking the STAR tests*
- *Number of students in grade 10 taking the CAHSEE.*

Currently, LEAs are required to submit an assessment answer document for every student, in the grade levels required to take the test, enrolled in the district on the first day of testing, regardless of whether the student actually took the test. The CDE calculates the participation rate by dividing the number of completed answer documents by the total number of answer documents submitted.

A.1.3 Academic Performance Index (API)

The API summarizes results of STAR tests (California standards tests and norm-referenced tests) and the CAHSEE. To meet AYP, schools must have an API above the "status bar" or show growth of at least a one point on their API. To determine API, the CDE needs the same CST, CAPA, and CAHSEE information collected for AYP (see subsection A.1.1, above), plus the following additional information:

- *Each test taker's performance level for the CST in English language arts and math, grades 9 – 11*
- *Each test taker's performance level for the CST in science and social science, grades 9 – 11*
- *Each test taker's performance level for the NRT in English language arts and math, grades 2 – 11*

- *Each test taker's performance level for the NRT in science, grades 9 – 11, and grades 5 and 8 in subsequent years.*

Currently, the CDE obtains test results from the assessment vendors.

For all schools with at least 100 students with test results included in the API, the CDE determines each school's rank (in deciles) by school type when compared with similar characteristics. To determine similar characteristics, the CDE needs to know:

- *Student grade from which student has been continuously enrolled at the school (paired with next data element to determine a school's mobility exclusions)*[1]
- *Student grade in which student is currently enrolled at the school (paired with prior data element to determine a school's mobility exclusions)*
- *Student race/ethnicity* (already noted in subsection A.1.1, above)
- *Student socioeconomic status* (already noted in subsection A.1.1, above)
- *For each school, percentage of teachers who are fully credentialed*
- *For each school, percentage of teachers who hold emergency credentials*
- *For each school, percentage of students who are English language learners*
- *For each school, average class size*
- *For each school, whether it is a multi-track, year-round educational program.*

Currently, the CDE collects these data elements each fall through the California Basic Educational Data System (CBEDS).

A.1.4 Graduation Rate

Schools that include the 12th grade must increase (by one-tenth of one percent) their high school graduation rate each year, or be above the graduation rate status of 82.8, or have a 0.2 increase in the graduation rate when the average rate of the last available two years is compared with the average rate of the preceding two years. In order to determine this, the CDE needs the following data elements:

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[1] Calculating a school's "student mobility" is determined as follows. If the grade from which this student has been continuously enrolled in the school matches the grade in which this student has been continuously enrolled in the school, then student is counted as student mobile. A student is not mobile if "i" and "ii" are different, or if one of the values is missing. The percent of students that are "school mobile" is one of the attributes used to group similar schools.

- *For each school, annual enrollment status of each student in grades 9 – 12*
- *For each school, reason why each student in grades 7 – 12 leaves the school.*

Currently, the CDE collects enrollment, graduate, and dropout counts each fall through CBEDS. However, calculating graduation rates from these aggregate counts is problematic.

A.2 Title II: Preparing, Training, and Recruiting High Quality Teachers and Principals

Programs under Title II are held accountable primarily through indicators reported for **Performance Goal 3, Indicators 3.1, 3.2,** and **3.3**.

To measure progress on **Performance Indicator 3.1**, (*the percentage of classes being taught by "highly qualified" teachers*), all schools must report the number of core courses[2] being taught and, for the teachers teaching these core courses, whether he/she meets NCLB requirements. In addition, the CDE must know the number of courses being taught by teachers meeting NCLB requirements in "high-poverty" and "low poverty" schools. In order to determine this, the CDE needs to know:

- *For each teacher, whether each course taught by the teacher is a "core academic" course under NCLB*
- *For each teacher teaching each core course, whether the teacher has met NCLB requirements for that course*
- *For each school, the poverty rate.*

Currently, the CDE collects this information each fall through *Consolidated Application (ConApp) for Funding Categorical Aid Programs (Part II)* (ConApp). Beginning in the fall of 2005, the CDE will require LEAs to provide the above ConApp information and the following additional information on the CBEDS Professional Assignment Information Form (PAIF):

- A California Commission on Teacher Credentialing certificate number for each certificated staff
- For each course taught by a certificated staff, the LEA must indicate whether it is a core academic course under NCLB requirements, and, if a core course, whether the teacher teaching the course meets NCLB requirements for that course.

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[2] English, Reading/language arts, Mathematics, Science, Civics and Government, Economics, Arts, Foreign Language, History, Geography, and Self-contained/elementary multiple subject classes.

For **Performance Indicator 3.2**, (*the percentage of teachers receiving high quality professional development*) districts must report the number of teachers participating in high quality professional development. In order to report this we need to know:

- *For each school, number of teachers teaching core academic courses*
- *For each school, number of these teachers who received high quality professional development.*

Beginning in the spring of 2004, the CDE will request districts to report: (1) the number of teachers in the school teaching core academic classes, and (2) the number of these teachers who received high quality professional development. The CDE is requesting this information on the *2004-2005 Consolidated Application for Funding Categorical Aid Programs (Part I)* (ConApp). CDE will provide LEAs with federal guidelines on the characteristics of such professional development.

For **Performance Indicator 3.3,** (*the percentage of paraprofessionals who are qualified*), Title I schools must report the percent of Title I supported paraprofessionals, who assist in instruction, that meet NCLB requirements. To determine this, the CDE needs to know:

- *For each school, whether it receives Title I funding*
- *For each Title I school, number of paraprofessionals funded by Title I who assisted in instruction*
- *For each Title I school, number of these paraprofessionals who meet NCLB requirements.*

Beginning in the spring of 2004, the CDE will request LEAs to provide these data on the *2004-2005 Consolidated Application for Funding Categorical Aid Programs, Part I*

A.3 Title III: Part A: English Language Acquisition, Language Enhancement, and Academic Achievement Act

The CDE reports **Performance Goal 2** (a*ll limited-English proficient students will become proficient in English and reach high academic standards, at a minimum attaining proficiency or better in reading/language arts and mathematics*), **Performance Indicators 2.2 and 2.3** under AYP. Under **Performance Indicator 2.1** (*the percentage of limited-English proficient students determined by cohort, who have attained English proficiency by the end of the school year*), LEAs receiving Title III funds must meet the following two Annual Measurable Achievement Objectives (AMAOs) for English learners:

- Gains in the percentage of students making progress in learning English
- Gains in the percentage of students attaining English proficiency.

The two subsections that follow describe the data elements needed to measure each of these two criteria that LEAs must meet in order to meet the AMAO for English learners.

A.3.1 Gains in the Percentage of Students Making Progress in Learning English

Each LEA must demonstrate annual increases in the percentage of students making progress in learning English on the California English Language Development Test (CELDT). "Students making progress" include students gaining one proficiency level or attaining or remaining at the level of English language proficiency. English proficiency is defined as "early advanced overall", with all skills at the intermediate level or above. To determine this, the CDE needs the following data elements:

- *Student English proficiency status* (already noted in subsection A.1.1, above)
- *Each test taker's performance level and scale score for the CELDT, for the three subject areas and overall, for the prior and current years*
- *For each LEA, whether it is receiving Title III funding.*

The CDE collects the student's prior CELDT score on the CELDT header sheets. The CDE determines an LEA's Title III status from an existing Title III database.

A.3.2 Gains in the Percentage of Students Attaining English Proficiency

Each LEA must demonstrate annual increases in the percentages of students, within a specified cohort, attaining English proficiency, (defined as "early advanced overall", with all skills at the intermediate level or above). The cohort includes: (1) students with two years of CELDT scores who have been in U.S. schools for four or more years, (2) students at the intermediate level or above who did not reach English proficiency the prior year, and (3) students below the intermediate level the prior year who met the English proficient level. To determine this, the CDE must have the following data elements:

- *Student English proficiency status (already noted in subsection A.1.1, above)*
- *Student's first year enrolled in a U.S. school*
- *Each test taker's performance level and scale score for the CELDT, for the three subject areas and overall, for the prior and current years* (already noted in subsection 3.3.1, above)
- *Whether the LEA is receiving Title III funding* (already noted in subsection 3.3.1, above).

The CDE collects background information, including the student's prior CELDT score and the student's first year in a U.S. school on either the CELDT header sheets or from the pre-

identification ("pre-ID) files created by LEAs and submitted to the CELDT test vendor prior to administration of the test. The CDE determines an LEA's Title III status from an existing Title III database.

A.4 Title IV: Part A: Safe and Drug-Free Schools and Communities

Title IV of NCLB requires that a "Uniform Management Information and Reporting System" (UMIRS) be established to collect four specific types of school safety related data, specifies the source of some of the data, and requires that the data be reported to the public. California is not required to report these data to the federal government. However, UMIRS does provide data related to **Performance Goal 4**, (*all students will be educated in learning environments that are safe, drug free, and conducive to learning*). The CDE needs the following data for UMIRS:

- *Number of students meeting truancy Education Code §48260 criteria*
- *Number of students suspended and/or expelled for violence or drug use, by Education Code section*
- *Information on the types of violence and drug prevention programs provided*
- *Information on incidence, prevalence, and perceptions of drug use and violence.*

The CDE plans to obtain this information as follows:

- Truancy rate. To calculate this, the CDE needs the total number of students meeting truancy Education Code §48260 criteria (numerator) in one school year and a school's CBEDS enrollment (denominator). The CDE will begin collecting this new §48260 information during the spring of 2004 on the *2004-2005 Consolidated Application for Funding Categorical Aid Programs (Part I)*.
- Suspension and expulsion rates. To calculate this, the CDE needs the total number of students suspended and/or expelled for violence or drug use, by Ed Code section (numerator) in one school year and a school's CBEDS enrollment (denominator). The CDE will begin collecting aggregated data for this new §48260 information during the spring of 2004 on the *2004-05 Consolidated Application for Funding Categorical Aid Programs (Part I)*.
- Information on the types of violence and drug prevention programs provided. The CDE will collect this data from the California Healthy Kids Annual Report.
- Information on incidence, prevalence, and perceptions of drug use and violence. The CDE will collect this data from the California Healthy Kids Annual Report.

The Gun-Free Schools Act (GFSA), which was reauthorized by NCLB as section 4141 (under NCLB Title IV), requires LEAs requesting Elementary and Secondary Education Act (ESEA) funds to submit specified expulsion information related to firearms. For all expulsions due to bringing a firearm to school or possessing a firearm at school, districts must submit, by school, the type of firearm, whether the student was referred to an alternative school or program, whether the terms of the expulsion was shortened to a term of less than one year, and whether the student was disabled. To determine this based on student level data, the CDE needs the following data:

- *Student exit/withdrawal reason code.* Codes would need to include the following:
  - *"*Student was expelled with no further participation in an academic program working toward the completion of a high school diploma or GED certificate or its equivalent". This is an existing California School Information Services program exit/withdrawal reason code.
  - "Student referred to an alternative school or program"
- *Student reason for discipline*. One of these codes would indicate "Possessing, selling, or furnishing a firearm" – an existing California School Information Services program reasons for discipline code.
- *Student grade level* (already noted in subsection A.1.1, above)
- *Student type of firearm brought to school or possessed at school*
- *Whether the term of expulsion was shortened to a term of less than one year*
- *Student disability status* (already noted in subsection A.1.1, above).

The CDE will begin collecting this new information during the spring of 2004 on the *2004-05 Consolidated Application for Funding Categorical Aid Programs (Part I)*. Because the new ConApp form will be just for information about students expelled for bringing a firearm to school or possessing a firearm at school, the new form asks only for the last four data elements above and whether the student was referred to an alternative school or program.

A.5 Title IX: General Provisions

Under the Unsafe School Choice Option defined in Title IX of NCLB, each state receiving NCLB funds must implement a statewide policy that requires a student attending a persistently dangerous public elementary or secondary school, or who becomes a victim of a violent criminal offense while at school, be allowed to attend a safe public school. This also provides data for **Performance Indicator 4.1** (*the percentage of persistently dangerous schools, as defined by the State*).

In California, a public school is considered to be "persistently dangerous" if the following two conditions exist for three-consecutive years:

- The school has a federal or state gun-free schools violation or a violent criminal offense has been committed by a student or a non-student on school property
- The number of students expelled for any of nine specified criminal offenses considered to be violent, exceed one of two specified rates: (1) three expulsions for a school with less than 300 students, or (2) one expulsion for every 100 students, for larger schools.

To determine whether a school is persistently dangerous based on site level data, the CDE needs to know:

- *Number of students expelled for each of nine specified offenses*
- *The school year in which each expulsion occurred.*

The CDE collects this information on the *Consolidated Application for Funding Categorical Aid Programs (Part I).*

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Appendix B

Data Elements Required to Compile NCLB Reports

The appendix provides a summary of the data elements required to meet No Child Left Behind (NCLB) reporting requirements. **Exhibit B-1**, following this page, lists the data elements identified in Chapter 3 of this needs assessment report. The exhibit identifies where the Department of Education (CDE) now collects these data, and, if the data element is not collected, how the CDE plans to collect these data through an existing data collection. Data elements needed to meet reporting requirements in more than one NCLB title are listed once, under the NCLB title that first drives the data element.

In addition to data elements required for NCLB reporting, the CDE identified two additional data elements that are needed to support the data system required by SB 1453:

- **A unique student identifier**. A unique ID is needed to match records of individual students from one test administration to the next as the student progresses through California public schools (longitudinal data). This data element also helps meet two NCLB requirements: keep track of continuous enrollment at the same school and district between fall and spring, and to monitor which students are absent or exempt from testing.
- **Institution identifier**, which is the "CDS" number or county-district –school number. This data element is needed to compile NCLB required reports for student achievement by district and by school.

Exhibit B-1

Data Elements Required to Compile NCLB Reports

Title I Part A: Education for the Disadvantaged (student-level data)

Now provided to CDE by test vendors.

- Each test taker's performance level and scale score for the CST in English language arts and math, grades 2 – 8
- Each test taker's performance level and scale score for the CAPA in English language arts and math, grades 2 – 8, and 10
- Each test taker's score for the CAHSEE in English language arts and math, grade 10. For SB 1453, the CDE also needs the 11 ELA subgroup scores and the 10 math subgroup scores, both number and percent correct.

Now collected on statewide assessment header sheets and answer documents

- Student grade level
- Student gender
- Student race/ethnicity
- Student disability status
- Student English proficiency status. This subgroup includes English Learners and Redesignated-Fluent English Proficient (R-FEP) students. R-FEP students will continue to be included only until they have attained the proficient or above level on the ELA CST for three years.
- Student economically disadvantage status. Economically disadvantage status determined based on participation in the National School Lunch Program and/or parent education level.
- Student migrant status
- Student district of residence if different than district of service (for special education students).

Now determined by counting assessment answer sheets submitted by LEAS for every student

- Whether student has been continuously enrolled in the school since the fall
- Whether student has been continuously enrolled in the district since the fall
- Number of students in grades 2 – 8, and 10, enrolled on the first day of testing
- Number of students in grades 2 –8 taking the STAR tests
- Number of students in grade 10 taking the CAHSEE

Now provided to CDE by test vendors. **NOTE**: these API elements are in addition to the first three elements listed in this exhibit, which also are needed for AYP

- Each test taker's performance level and scale score for the CST in English language arts and math, grades 9 – 11
- Each test taker's performance level for the CST in science and social science, grades 9 – 11
- Each test taker's performance level for the NRT in English language arts and math, grades 2 – 11
- Each test taker's performance level for the NRT in science, grades 9 – 11, and grades 5 and 8 in subsequent years

Exhibit B-1

Data Elements Required to Compile NCLB Reports

- Student grade from which student has been continuously enrolled at the school

Now collected on answer sheets and CBEDS. Needed to rank a school's API within similar schools

- Student grade in which student is currently enrolled at the school
- For each school, percentage of teachers who are fully credentialed
- For each school, percentage of teachers who hold emergency credentials
- For each school, percentage of students who are English language learners
- For each school, average class size
- For each school, whether it is a multi-track, year-round educational program

Now collected only by CSIS LEAs.

- For each school, annual enrollment status of each student in grades 9 – 12
- For each school, reason why each student in grades 7 – 12 leaves the school

Title II Part A: Preparing, Training, and Recruiting Highly Qualified Teachers

Will be collected on Fall 2005 CBEDS - PAIF

- For each teacher, whether each course taught by the teacher is a "core academic" course under NCLB
- For each teacher teaching each core course, whether the teacher has met NCLB requirements for that course
- For each school, the poverty rate

Will be collected on 2004-2005 Con App

- For each school, number of teachers teaching core academic courses
- For each school, number of these teachers who received high quality professional development
- For each school, whether it receives Title I funding
- For each Title I school, number of paraprofessionals who assisted in instruction in Title I funded programs
- For each Title I school, number of these paraprofessionals who meet NCLB requirements

Now collected on CBEDS

- For each teacher, whether the teacher is fully credentialed
- For each school, average class size
- For each school, whether it is a multi-track, year-round educational program

Title III Part A: English Language Acquisition

On assessment header sheet

- Each test taker's performance level and scale score for the CELDT, for the three subject areas and overall, for the prior and current years
- Student's first year enrolled in a U.S. school
- For each LEA, whether it is receiving Title III funding

Exhibit B-1

Data Elements Required to Compile NCLB Reports

Title IV Part A: Safe and Drug-Free Schools and Communities

Will be on 2004-2005 Con App – aggregated data

- Number of students meeting truancy Education Code §48260 criteria
- Number of students suspended and/or expelled for violence or drug use, by Education Code section

Will be on California Healthy Kids Annual Report

- Information on the types of violence and drug prevention programs provided
- Information on incidence, prevalence, and perceptions of drug use and violence

Will be on 2004-2005 Con App – on form used only for students expelled for firearm

- Student exit/withdrawal reason code
- Student reason for discipline

Only needed if expulsions for firearms are tracked using student level records

- Student type of firearm brought to school or possessed at school
- Whether the student was referred to an alternative school or program
- Whether the term of expulsion was shortened to a term of less than one year

Title IX General Provisions

Now collected on Con App

- Number of students expelled for each of nine specified offenses
- The school year in which each expulsion occurred

Appendix C

Assessment Scores and Subscores

Senate Bill 1453 requires that LEAs retain pupil achievement data from assessments that include, to the extent possible, subscore data within each content area. This is a functional requirement for CALPADS identified in section 3 of this feasibility study report. The CDE reviewed the assessments and identified subscores for each. **Exhibit C-1**, following this page, presents a summary of scores and subscores.

Exhibit C-1. Assessment Scores and Subscores

Assessment	Subjects	Scores	Subscores
❑ STAR – Standardized Testing And Reporting: California Standards Tests (**CST**s)	❑ English-language arts ❑ Mathematics ❑ Science (a) ❑ History (a)	❑ Scale ❑ Performance level	❑ Reporting clusters
❑ STAR – Standardized Testing And Reporting: California Alternate Performance Assessment (**CAPA**)	❑ English-language arts ❑ Mathematics ❑ Science (a)	❑ Scale ❑ Performance level	❑ None
❑ STAR – Standardized Testing And Reporting: California Achievement Tests, Sixth Edition Survey (**CAT/6 Survey**)	❑ Reading/Language ❑ Mathematics ❑ Science (a) ❑ Spelling (a)	❑ Scale ❑ National percentile rank ❑ Normal curve equivalents ❑ Stanine (b) – divides NPR distribution into nine parts	❑ None
❑ STAR – Standardized Testing And Reporting: Spanish Assessment of Basic Education, Second Edition (**SABE/2**)	❑ Reading (a) ❑ Language (a) ❑ Mathematics (a) ❑ Spelling (a)	❑ Scale ❑ Reference group percentile rank ❑ Normal curve equivalents ❑ Stanines (b) – divide NPR distribution into nine parts	❑ None
❑ **CAHSEE** – California High School Exit Exam	❑ English-language arts ❑ Mathematics	❑ Scale ❑ Pass or fail	❑ Math – # and % correct in 10 areas ❑ English-language arts – # and % correct in 5 areas, and 1 scale score

Exhibit C-1. Assessment Scores and Subscores

(continued)

Assessment	Subjects	Scores	Subscores
❑ **CELDT** – California English Language Development Test	❑ Listening ❑ Speaking ❑ Reading ❑ Writing ❑ Overall ❑ Comprehension	❑ Scale – current and prior year ❑ Performance level – current and prior year	❑ None

(a) Not required for NCLB reporting, but to be retained in CALPADS

(b) Stanine is a standardized score with nine categories and a standard deviation of 1.96. The name comes from the fact that stanine scores range from a low of 1 to a high of 9.

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